ARCHITECTURAL MAGAZINE.

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ART. I. On the Importance of Architecture. By W. H.

THE nearer any invention applies to the wants of mankind, and the more it contributes to their comforts and benefit, the greater. becomes its claim to importance. In the present age, which would appear to have supplied, in its advancement, almost every thing requisite for actual necessities (not to speak of more refined desires), there is not a discovery but what becomes of general importance, should it render available to the public any point of utility, however simple. If, then, utility constitutes importance, architecture may be adduced as an example which, without tracing its merits so far back as its invention, presents a very fit subject for such a qualification. There is, probably, no consideration from which a more complete inference can be derived in this respect; for the reason that, from its simplicity of purpose, it is comprehended to that extent which at once prompts its proper appreciation. By simplicity is meant that plain and manifest usefulness, which appears evident, from the certainty that buildings could not be dispensed with; and which renders unnecessary any doubt or discussion on this head. Without alluding particularly to the uses of architecture, in the multitude of intentions that it answers, it is proposed to make some observations upon its importance, regarding it as a relative and progressive object of improvement. arter studies is but a railer with

In considering, in the first place, building as a trade, its magnitude is at once evident, from the numerous divisions and separate branches of business that are connected with it, or, more properly speaking, that form essential parts of it. This has, doubtless, arisen from the circumstance of a very great portion of the natural materials and ingredients which are used, not requiring any other labour than that of the workman; and which consequently, renders one department sufficient for his attention. The articles of timber, stone, marble, and the like, undergo no previous preparation to make them appropriate for use, and their entire change and adaptation is left for the respective artisans.

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There are, notwithstanding, numerous articles, as brick, tile, glass, and metal, the produce of manufacture; as well, also, as slate, lime, &c., which it forms no part of the builder's business to prepare. Other causes, however, may have led to the separation of the arts employed in building. It is requisite that many of the employments alluded to should proceed at the same time, for the proper execution of building; and this could not be performed with facility, unless by the cooperation of different, and yet practised, hands. The opportunity that is offered, both to workmen and master builders of small capital, in thus procuring a better livelihood, by pursuing only one department, to attain greater proficiency, also adds its reason for this plan. It is on these accounts that, in comparison with other trades, its importance is prominent; for, while it divides itself so as almost to embrace every necessary operation, and is thus the substance of many callings, it unites its powers in one isolated purpose, and is, as it were, independent. Latterly, many large capitalists have combined in their direction the whole circle of building operations, and their success seems to prove, that it is much to the convenience of the public; but it has been made a subject of serious consideration, whether the innovation upon long used habit has not had a bad effect upon both the interests and the performances of the trade.

Attached to importance follows respectability; and, as a necessary consequence thereto, it might have been left unnoticed, were it not for the purpose of mentioning one particular claim to this title. The society of freemasons, instituted, as the name implies, by a portion of the building trade, has obtained an extraordinary influence, and a character of national and even universal consequence. Originated for the humble projects of business; pursued for the instructive objects of art; patronised for the noble views of charity, this institution ranks as a distinguished instance of the country's munificence. If, in the present day, when open to others than practical men, and followed by those more searching after amusement and pleasure, than for any other study, it may have been slighted in its importance; it should be said, also, that the most illustrious and the most enlightened have availed themselves of its honour in endeavouring to honour it. It is not, however, the merit of its members, but the praise due to the society, which falls to the credit of the founders; and it is considered to be a strong proof of the real preeminence of building as a trade, and also of the general

inclination to regard it as such.

The science of construction next offers itself for consideration, as forming a part of mechanics, the chief tendency to which is its importance in building. It is a wide term, but in the present application it may be defined as enforcing substantiality, and

aiming at economy. The knowledge of the various strengths of materials, as well as of placing their powers to the utmost advantage, may be called, perhaps, a matter of calculation or of experience; but the science consists in the employment of such means, when their trial and proof must depend on the result of influences of a speculative, and often of a changeable, nature, It aims at economy, in the first place of room; or, to speak practically, by a strict limitation of the point of support, it encroaches as little as possible upon the area for occupation. It is an acknowledged excellence in construction, that it should work its ends with seeming facility. When, as in many cases, it occurs that large and ponderous weights of building, are verged upon bearings of comparatively small extent, it is to be attributed to the highest ability in the use of constructive resources, and is thus conducive to an admired point of architectural beauty, in addition to its utility. It is also economical in its more common meaning, and by the improvement and saving, in the prudent choice and apportionate quantity of materials, the architecture of recent date has been almost freed from the accusation, so often

popularly advocated, of its extreme extravagance.

Lastly, Architecture as an art, or the more superficial study necessary to that part of it in which it is contemplated as a matter for ocular examination, is another point in pursuance of the subject. To prove it an art would be an evidence of its importance. Does the invention of a fertile imagination luxuriate in the production of novelty of forms and combinations? It may ennoble by originality, it may assist by variety; but it is not art. for it has not restriction. Does the calculating reason, in the coolness of argument, establish by principle and experience the beauty of forms from known influences? The labour is not lost: it conveys a mental delight: but it is not art, for it wants the stirring charm of creation. Is, then, the definition of art of such difficulty? Let the first candidate, invention, curb the gift of flight to the views suggested by reason, and let the strictness of the latter expand to the invitation of such a union; and it will at once exhibit a representation of the application of art to architecture. The present question is, however, more concerning its importance, with reference to other arts. In this discussion there appears a "divided duty;" for while, by its practical connection with trade, it is placed in conjunction with what are termed inferior arts; on the other hand, by its alliance with design, it has considerable pretensions as a fine art. A conviction of its importance as an inferior art has been endeavoured to be expressed in the previous allusion to the trade of building. but it remains to place it in a proper light with reference comparatively to the fine arts. The perfection of the arts of painting, sculpture, or music, is inimitable. There has not been a second

Raphael, nor an Angelo, nor a Handel; but it would be within the limits of an architectural achievement to erect another Athens, as far as imitation would allow; although it might be in vain to seek for the sculpture of Phidias. Not to trespass on a subject which has been already very ably expounded in several parts of this work, the writer is of opinion, from the reason he has stated, that its claims as a fine art can only be said to be of moderate importance. Humble acquirements in it as a profession meet with greater success than in any of the others; and this arises from the same cause, that the practice of it may be reduced almost to a system of imitation from precedents; when,

in other arts, mediocrity is of little avail.

The importance of architecture in a national point of view. or, in other words, the importance attached by a nation to its architecture, as compared with that of others, as well as that it derives by it, becomes a topic from which many considerations present themselves. The public purse is never more unsparingly and cheerfully opened than when for any object which is to enhance the dignity of the state, the dedications of the national religion, or the pride of the people's power; and these subjects are never more constantly called into mind than by public buildings. The contemplation of a palace, a church, an hospital, or a prison, draws forth feelings doubtless much excited by the particular purposes for which the buildings which call them forth were erected; but while this may be the first suggestion to the mind, it is the architecture and the vast property, in a manner, deposited in them (for whatever purpose it may be), which gives rise to their importance and extent. While the motive adds to the national honour, the execution of it contributes to the national pride; and, as it should, it is to be hoped that it does convey a gratification individually from this cause alone. That it is a source, although a silent one, of national pleasure, is evidently the case, by the grief that is always manifested by the accidental destruction of any admired erection. Of course, in private buildings, the loss of property is sufficient cause of sorrow; but when the many sufferers make the loss light and trivial, it can only be the store set, in fact, upon an ornament, the being deprived of which has so much influence. If, then, architecture so widely and popularly diffuses its impressions, how much more would its importance be increased if more generally studied, or if the beauties of the art were more frequently presented to the public eye? The study of beauty becomes more exalted when known by intrinsic merit, rather than by comparison with deformity. As a point of national importance, instance ancient Rome. A succession of encroaching wars abroad, and continued arbitrary government and democratic revolt at home, form a history which is painful to dwell on, and

which does away with the regret at such an "empire's wreck;" but when, by the remains it has left, a glimmer only of its magnificence is preserved, which outshines the light of any existing power, it is their pursuit of architecture which insists upon the nation's importance; which pardons in our imagination all historical blemishes; and which confirms that nation in its enviable distinction.

To collect together these brief remarks, on the consideration of the importance of architecture, the subject has been glanced at as it has cursorily occurred; as a trade, for its magnitude; as a science, for its utility; and, as an art, for its comparative merit and popular character; with the intention rather to suggest or apply admitted facts, than to pronounce opinions.

London, March 12. 1835.

ART. II. On the comparative Merits of Architects and Amateurs, with regard to Competition Plans. By CANDIDUS.

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Your correspondent, Mr. Sambell (p. 143.), appears, very unintentionally, to have paid a compliment to a class of persons whom he certainly did not intend to recommend to favour. What reasons he has for imagining that it is by any means a practice with amateurs, or non-professional architects, to send in competition designs, I know not. He has not mentioned a single instance, much less has he pointed out one where any such design has been adopted. Nevertheless, I do not pretend to dispute the fact, although I must be allowed to think it rests upon a few accidental cases, otherwise it would be pretty well known. But to come to the compliment itself. By what Mr. Sambell also says, he leaves it to be inferred, that such persons are apt to show more taste and ability in composition than regularly educated men; which is not saying much for the talents of the latter, if they suffer themselves to be excelled by those whom they, of course, consider mere novices, dabblers, intruders, and interlopers in the profession.

Unless the amateur and "architectural draughtsman" give evidence of greater taste in their designs than the "constructive architect," there can surely be very little reason for the latter to apprehend any rivalry from the former, since he must, or, at least, he ought, to know, far better than any non-practical man, how to consult both correct judgment and taste at the same time. If the "constructive architect" be no match for "the amateur" here, he must be allowed to be as deficient as the latter, though for a different reason; executive skill being on one side, invention and taste on the other. Still it may be argued, that the latter qualities are by no means to be put into

competition with what is more indispensable, because a building which exhibits no taste at all, or, what is worse, which only shocks by its bad taste, may answer every useful purpose; whereas the finest design will either be of no avail if found impracticable, or will prove any thing but satisfactory, if executed so as not to endure. Be it so; let us even say that taste and invention are trifles, what any person can easily acquire by attending to such matters. Then arises a somewhat formidable question: — Such being the case, how happens it that those who are masters of construction, the more important and diffcult part of their profession, do not care to render themselves equal proficients in its asthetic or ornamental department? Wherefore do not they foil the amateur and the "architectural dranghtsman" at their own game, by applying themselves to the same studies, with a far better basis for them already at their command?

This is a question I leave to be answered by those whom it most concerns; and by so doing shall escape the odium of formally and pointedly saying what would be the more offensive in proportion as it was correct. I prefer following up the preceding question by another, which is, — If genius, taste, feeling, imagination, have any thing to do with architecture: if, in short, architecture be an art worthy of the name of one, and something more than mere routine study and the knowledge of building, why should not those who devote themselves to it con amore, who admire it chiefly as an art, be entitled to as much respect as those who pursue it as their calling, and for the sake of the lucrative emoluments it bestows? The former class are at least fully as disinterested as the latter; they are also, perhaps, to the full as likely to take up the pursuit with fresher views, and — as all art

should be, with a generous relish and delight.

If architecture, I repeat, be really an art, like every other, it must require some degree of affection and intuitive feeling in its professors, as well as study. Without such aid, study will accomplish but little, because it will be little more than mechanical drudgery, encouraged by no nobler stimulus than that of interest alone. I admit, that he who so applies himself, may be respectable as a tradesman, should he be prosperous; likewise, that no one will call his respectability in question: but how he can hay claim to the title of artist is, to me, particularly puzzling. While thus throwing out my opinions, I do not insist upon their being adopted without examination; far from it; may, I shall not care should they be soundly attacked, as, I trust, I am always open to conviction, should I be proved to be in the wrong.

In my opinion, it does not argue much liberality to decry amateurs merely because they are extra-professional. There may certainly be stupid, ignorant, tasteless amateurs, as well as others; still, it does not exactly follow, that a man must be a blockhead in an art, merely because he is an amateur in it. Supposing him to possess as fine and original ideas as the professional man; as exact an eye for proportion, and for all the harmonies of which architecture is susceptible; as lively a fancy, and as liberal; so far, at least, he is entitled to quite as much admiration. Should he prove superior in these respects, his contraband accomplishments may, in the eyes of the unprejudiced, look

like superior desert.

In none of the other liberal arts is it considered a stigma that a man should be autodidact; that, for his proficiency, he should be more indebted to his own instinctive love of the pursuit, and his own exertions, than to the regular instructions of others; neither has this always been the case in regard to architecture itself. Witness Raffaelle, Michael Angelo, and Burlington. these are persons the world is pleased to admire; I do not exactly say that I myself greatly admire their architectural taste; and yet, did any of them serve a regular apprenticeship? Many of the Italian architects were so only occasionally and incidentally, being quite as much known as sculptors or painters. Count Alfleri, who erected the Royal Opera-house at Turin, esteemed a chef-d'œuvre in its day, was educated for the legal profession, and practised some time at the bar; and a living English architect (Blore) was known for many years as an antiquarian and architectural " draughtsman " only, before he applied himself practically to architecture. Yet, wherefore should I produce such instances, when Perrault alone, and the colonnade of the Louvre, afford a triumphant refutation of all the sneers that can be levelled against amateurship in architecture.

For my own part, I should think that the chances, if I can here properly apply that expression, are greater in favour of talent being possessed by one who is self-taught, than by him who is merely trained. The former, it may be imagined, applies himself to his pursuit con amore, because he is attracted by it, and because he delights in it; whereas the other may be put to it without any choice whatever of his own, merely because it agrees with the inclination or convenience of his friends; or for that other reason hinted at by Martial in one of his most biting epigrams. After-years may undoubtedly bring along with them a genuine relish for the art, a relish which only the consciousness of talent can bestow. Yet such is far from being invariably, or even generally, the case; otherwise we should not behold so many plodders in the profession; men who, when they have an opportunity of putting two ideas together, sparingly content themselves with the fraction of even one; pilferers from those

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who have nothing of their own to be pilfered; copiers of those

who have existed by copying others.

To me, again, it appears strange policy, if no worse, on the part of professional men, to seek in any way to discourage or discountenance amateurship in architecture, since by so doing they are likely to reduce the already far too limited number of those who are qualified to take any real interest in the art, or capable of appreciating its beauties. Were it not for the class of amateurs, in all probability we should never have possessed more than technical and elementary works on architecture; which, however indispensable in themselves, as giving the initiatory precepts and rudiments of the art, have no more literary pretension or interest than so many grammars. For historical elucidation, for disquisition, for criticism, we are far more indebted to amateur than to professional writers. To mention but one instance, certainly a striking one, the recently published work of the late Thomas Hope is a richer contribution to the literature of the art than almost any thing which has ever proceeded from a professional pen in this country. It rarely happens, in this country, at least, when professional men publish either their own designs or those of others, that they enter into any remarks of any kind, except occasionally a few vague ones, by way of preface, and which would be almost as suitable for any other work as for their own. This is the more unaccountable, because for want of explanation as well as of description, in regard to such particulars as are not shown in the plates themselves, their utility as studies is greatly diminished, and a great deal is left to conjecture. Such architects, instead of endeavouring to fix attention upon their designs, by especially pointing out what is most liable to escape notice, and also by causing the mind to dwell upon the subject, and to take into consideration every particular, leave others to make whatever they can of that which is shown to them. Thus they neither do justice to themselves, nor to any other party. Surely an architect must be able to comprehend his own views and ideas; and to explain his motives, if he has any, much better than any one else; and, although it may be a very great forbearance, it is not of the most laudable description, when he omits a fair opportunity of justifying himself whenever he has been obliged to act contrary to his own taste. and to follow that forced upon him, as not unfrequently happens, by others.

Although some of them utter sad nonsense, amateurs who criticise works of architecture seem to be regarded with less jealousy than those who venture to take up their pencil and drawing-board. There is no outcry against those who, like Forsyth, Beckford, and countless others, pretend to judge of the art without having practised it; and yet, it is not easy to say

wherefore such should be the case. If a bungling amateur, utterly unqualified for such a task, should engage to execute a building, and produce a mere failure, so far from that giving any offence to the profession at large, whatever it may do to the parties whose concern it is, it rather serves to set in the strongest possible light the indispensable necessity of engaging only those who are perfectly well versed in the art of construction as well as in that of design; whereas an architectural critic, from not thoroughly understanding the subject, if he judges on false principles, and praises that which he ought to blame, does a serious injury to the profession: he misleads those who prefer following the dictum of others to judging for themselves; who, alas! are but too numerous; and does his best to vitiate the public taste, instead of improving it. The influence of amateur critics in injuring architecture, and, of course, its professors, is so much greater than that of amateur architects, that there is some reason for presuming that it is rather the success than the failure of the latter which excites so much professional dislike towards them.

Admitting a case to occur, that a design sent in by an amateur should be selected, in preference to several others, as superior to them in all that can be shown upon paper; it would, undoubtedly, be a gross imposition in such a person if, knowing himself to be ignorant of the art of construction, he were to undertake to superintend the erection of the building. Indeed, I can hardly imagine that any man would so grossly commit himself, when, from the excellence of his design, he must know enough to be fully aware beforehand of his own incompetence to the task; and that much greater practical knowledge than he possesses is indispensably requisite for carrying the work into execution. On the other hand, I see nothing either disreputable or objectionable, were the author of such a design to state, that he did not feel himself prepared to engage in the actual execution of it, without the assistance of a colleague. He might very reasonably be allowed to say, " As far as regards the design, I have met your wishes, and have succeeded in producing what you require, but I do not engage to proceed any farther alone. Either associate an able practical man with me, or intrust the execution of my ideas entirely to some other person."

This, it will be said, is carrying the principle of the division of labour to a most absurd length. Absurd it may be; but of its absurdity I have yet to be convinced. Unless it can be shown that practical science and superior taste uniformly go hand in hand, what absurdity could there be in securing both, although because they did not happen to be united in the same individual? Is it not more probable that the practical man would operate as a salutary check upon the man of fancy, and

restrain him from mere vagaries? Or will it be maintained, that the present system gives us all we can desire, the happiest invention and the most refined taste, accompanied with the greatest scientific skill?

ART. III. Further Remarks on Palladio. By CANDIDUS.

I ought, by way of penance, to be compelled to point out, one by one, all the manifold beauties of Andrea Palladio, for I now find that the opinion I before expressed of him runs quite counter to that of the celebrated Thomas Hope, who, in his posthumous and just published Historical Essay, pays a compliment to the genius of the Vicentine architect. How he could reconcile it to his critical conscience to utter what seems entirely at variance with his admiration of Grecian, and his unfavourable opinion of Roman architecture; particularly after decrying Michael Angelo for indulging in the very same caprices as we find in the works of Palladio, I know not, especially as those of the latter are not redeemed by the grandeur observable in the buildings of the former. By no means am I disposed to set myself up as an admirer of Michael Angelo's architectural style and taste, yet of the two he surely deserves to be criticised with less asperity, because architecture was with him only a secondary pursuit, his application being chiefly devoted to painting and sculpture.

Mr. Hope does not seem to have been alive to the necessity of supporting his opinion of Palladio by argument or reasoning; yet to have done so would hardly have been labour thrown away, because not Forsyth alone, but all the other admirers of Palladio, limit themselves to general and indefinite commendations, without particularising any one individual beauty or merit. It is strange. indeed, that excellence should not be worthy of a little examination, and towards such as myself it would be charity to enter into some investigation of it, because our eyes might then be opened to the perception of charms now completely hidden from them. I say "our eyes," for I do not happen to be exactly companionless in my blindness; in his Treatise on Architecture, Hosking shows himself nearly to the full as obtuse; and I have heard another individual, one of the most tasteful and enthusinstically studious architects among those now living, express himself, in regard to Palladio, in terms little short of execration.

Woods, however, is inclined to admire him, although it is difficult to say why; not merely because he too is exceedingly shy of discussing particulars, notwithstanding that he ventures to hint at many blemishes, but also because his opinions relative to Palladio by no means tally with the censures he has passed upon others. He, I find, perceives more to approve of than to

reprobate in the façade of the Palazzo Valmarana at Vicenzathe very building, by the by, which I quoted as an instance of most horrible deformity. (See p. 153.) In addition to the defects and inconsistencies there mentioned, it may now be noted, that in the ugly patches tacked to the ends of the front, as if to eke it out, there is an additional floor; that the windows here are narrower and smaller than those in the other intercolumns. and that there are mezzanines in the entablature, not confined to the frieze, but actually cutting through the architrave also! Altogether, these two narrow slices have nothing whatever in conformity with the rest of the front, but look as if belonging to other buildings commenced on each side of it. Even admitting, with Woods, that, "in other respects, the proportions are excellent," that seems to be a poor apology for so much positive deformity and bad taste. If, taken as a whole, it be disagreeable and full of glaring errors, what avails it to say that there are parts that may be excepted from censure? Or, is it not tantamount to an acknowledgment, that the architect had so little discernment as to commit errors so gross that even his admirers can offer no defence for them; solecisms in taste and against propriety, which almost any tyro in the art would now be ashamed of?

If we are content to put up with detached and piecemeal beauties, we may be satisfied with any thing, for that must be a most vile production, indeed, in which every one of the parts, taken merely as parts, is absolutely bad. Architects so very rarely attempt what they can claim exclusively as their own, that it is chiefly by the general conception and treatment of their subject, by the adjustment and collocation of the various divisions and subdivisions, that they can show any superior taste or originality. Their columns and entablatures are little more than so many formulæ, the property of no one in particular, and to be appropriated only by a felicitous combination with all the rest. What is it but the admixture of his pigments, and their collocation on the canvass, that distinguishes the able colourist from the dauber? The palette of the one is just as richly furnished as that of the other. What is it except his power of masterly collocation and combination, that constitutes a great musical composer? His gamut is just the same as that of others; he has no new elements of sound; his magic lies in the mastery with which he elicits, from those common to all, new and striking combinations peculiarly his own. What, again is it, save the same power, that distinguishes a noble poetical diction and style from an ordinary one? Is it not precisely that harmonious and eloquent disposition and structure, which any other co location of the very same words would fail to produce?

It is arrant stuff, then, far worse than sheer nonsense, because

more pernicious, to talk of the proportions of individual parts, if there be no aggregate proportion — no proportion, as regards feeling and taste, in the arrangement of the parts themselves. The best that can be said of works so constituted is, that they have shaped out the material of which others may avail themselves with better success. Too minute criticism, which looks exclusively to the separate items of a design, without at all attending to their result or gross amount, has been one great bane of the art. It fosters a narrow petty taste, an attention to insulated particulars or circumstances, with very little consider-

ation of, or regard to, the whole.

By no means would I be understood as recommending the study of general effect and proportion alone; quite the contrary: since, in my opinion, too much care cannot be bestowed upon detail; but then it must be as detail, as the finishing touches and working up of what is ably conceived. No minutiæ should be suffered to escape attention; nothing should be slurred over, as we generally find to be the case; yet, as a first and most important step, it is requisite that the elements of a superior design should be established in the leading ideas. So very far is general propriety or beauty from excusing inattention to individual merits, that, unless every single feature and its detail be appropriately finished up, the ensemble will become a mere sketch, or a crude unsatisfactory production, if considered in any other light: and it surely need not here be observed, that when we come to execute in such expensive materials as stone or brick, something more than a sketch, however clever it may be, ought to be looked for. I deem it all the more necessary to insist upon this, because, although even the authority of Palladio would not row persuade many to fall into the grosser errors with which his buildings and designs abound, architects of the present day. too readily content themselves with merely avoiding radical vices of that kind. They certainly commit fewer solecisms, but it is not cuite so certain that they give us a greater number of positive beauties. If their orders are better, because copied from the antique, it seldom happens that we find much else to admire, or any thing very felicitous that is peculiarly their own.

ART. IV. Thoughts on the Origin, Excellencies, and Defects of the Grecian and Gothic Styles of Architecture. By the late Dr. JAMES ANDERSON.

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(Continued from p. 159.)

GOTHIC Architecture, continued. — In continuing to trace the progress of that gradual developement of ideas by which our Gothic architects at length acquired the power of rearing those stupendous structures which will excite the admir-

ation of future ages, we proceed to remark, that when our artists had grasped the idea of connecting columns together by means of arches, and of arranging them in rows in opposite directions, they had made one great step towards the attainment of their wishes; but still much remained to be done. They had now, it is true, acquired the power of supporting the roof upon stone pillars placed at a considerable distance from each other; but, as the whole building above would thus be divided into square compartments, open at top, these spertures could only be closed by a roof supported by beams of wood resting upon these walls, so as to be still liable to be consumed by fire; the very circumstance they wished chiefly to guard against. Soon, however, they would perceive that, by throwing an arch from each of these columns to that in the opposite angle diagonally across the square, these arches would all meet in the centre, and thus admit of the whole of the apertures above being completely closed with stone. If an arch of the same kind was reared in the opposite side of the same pillar, it is plain it would be equally poised on all sides, so as to have nothing else to support but the weight pressing upon it in a perpendicular direction only. By gradual steps like these our artists were brought at length to form an idea of the possibility of supporting a roof consisting entirely of stone, upon pillars of the same materials placed at considerable distances from each other; and at the same time of giving to that roof an elegance of form and symmetrical arrangement that would prove generally pleasing. But still they were far from having attained the ultimate object of their wishes.

We are often put in mind, when we attempt to trace the progress of any human invention, that man is an imitative animal, and that he seldom has recourse to his inventive powers, unless when necessity compels him to do it. This truth was verified in the artists who demand our present notice, as well as all the others whose progress we shall have incidentally to investigate. They found that the semicircle was the form of arch almost exclusively adopted by the Greeks and Romans; and they naturally imitated that form of arch at the first, as their predecessors had done, without having qualified themselves fully to appreciate either the comparative excellencies or defects of that form of arch when applied to particular purposes. To this origin we may trace the attachment that our artists discovered to the semicircular arch, which is observable in the earliest specimens they exhibited in the first rude attempts they made to introduce their new system of architecture; for the semicircular arch is now admitted to be an undoubted criterion of the oldest Gothic structures. And as all the structures of this kind were, of necessity, accompanied with a heavy clumsiness of proportions, which a superior degree of knowledge taught the more enlightened artists of an after period how to lay of knowledge taught the more enlightened artists of an after period how to lay aside, this circumstance has given rise to the distinction of two styles of Gothic architecture, one of which has been called the old Gothic, the other the modern Gothic, or sometimes the Saracenic, from a notion that it was introduced into Europe by the Saracens. The truth, however, is, that these are both the same system of architecture, and were introduced by the same artists; the last differing from the first only by those improvements being introduced, which a more perfect knowledge of the principles of their art enabled them gradually to discover, in consequence of long experience and a continued attention to every particular concerning it. That these improvements depended entirely upon a more perfect knowledge of the powers of the masonic arch, and the uses to which it could be applied according to the exigencies of the case, I shall hope to be able to prove in the most satisfactory manner to every one who shall have the patience to attend to the few popular illustrations that follow, tending to explain the general principles of this little understood, though very important branch of masonry; without being obliged to have recourse to the intricacies of mathematical demonstration, which few of my readers may be supposed capable or desirous of following.

The fundamental principle of what we call a stone arch, by which phrase (to avoid the ambiguity that the name might suggest) I beg to be understood in this place to mean " any aperture in a wall or other building which is closed

at top by means of stones consisting of separate pieces, so applied as to preserve the continuity between the opposite sides of the aperture;"—the final amental principle, then, of such an arch, I beg leave to say, is the most simple thing that can be conceived. It consists in nothing more than giving the stones such a shape, as that, by means of their own natural gravity tending to make them all descend towards the surface of the earth, they mutually shall so act upon each other as to keep the whole firm and steady in its place; insomethat, if the pressure be equal on every point of the arch, so as not to admit of any one stone in it being pushed backward out of its place, the greater the pressure that is made upon it from above, the firmer the arch must be; provided always that the foundation on which it stands be firm, and the materials of which it consists so solid as not to admit of being crushed to pieces.

But although the fundamental principle of the masonic arch be thus simple and easy to be comprehended; yet in the mode of applying it for the purposes of common life, to individual eases as they successively arise, such amazing diversities occur, as to make it a matter of no small intricacy to those who have not particularly studied the subject, to perceive the propriety of adopting sometimes one form of an arch, and sometimes another, as the most proper for effecting the particular purpose in view: it will therefore be proper for me here to throw out a few hints on that head, with a view to enable the uninformed

reader to form some discriminative notions respecting it.

If an arch consisting of a very small section of a large circle were thrown over an opening, so as to approximate to the form of a straight horizontal line, it is obvious, that the weight of every stone in that arch would press directly downwards, and would have only a very small part of that weight supported by any of the stones adjoining to it. This united pressure, then, of the whole, would have a uniform tendency to push the stones at either end of that segment of the arch directly outward from each other; and, of course, unless a strong resistance were made at both ends, directly counteracting that pressure, the abattments would be forced asunder, and the arch would fall down. Hence it is obvious, that, of all the forms of an arch that can be devised, this is among the least proper to be chosen for connecting together two slender pillars; for, although these might be able to support a very considerable weight when applied on the top of the column, and pressing perpendicularly upon it; yet, when that pressure is applied laterally, the pillars have not strength to resist it, and they must, of course, be made to yield to it.

You may form some idea of the force of the relative actions and reactions, in this case, by the following familiar illustration. Take between your two hands ten or a dozen volumes of a book uniformly bound, with their backs all undermost; if your hands be pressed firmly enough towards each other, they may be kept in that position as long as you please without falling; but if the pressure be so great as to force your hands in the smallest degree asunder, the whole will fall directly to the ground, even if your hands had been supported by some object that could bear the weight. This, it must be confessed, is but an inaccurate illustration, yet it may serve to convey a pretty clear idea of the necessity of having abutments in this case that are immovably firm, so as to

resist giving way in the smallest degree to the pressure outwards.

Let us now suppose that, instead of the flat segment of a circle, as before, the same opening should be closed by means of a semicircular arch; it is very evident, that in this case the stones nearest the pillar from which the arches spring, will press directly downwards with their whole weight upon the pillar, and that the weight of those above them, in like manner, is supported in a great measure by those below them; insomuch that, if all supports in the middle were taken away after the half of the semicircle was built, they would still remain unmoved in their place; and when you come at last to close the arch, the two stones on either side of the keystone have a tendency to fall upon each other, and the keystone, by preventing that falling, tends to keep them in their places; so that the pressure upon the pillars, in this case, is much less forcible outwards than in the former, having a much greater tendency downward than outward.

We are thus led to perceive that, in proportion as the arch assumes a higher form, the pressure outward must be diminished, while the pressure downward form, the pressure outward must be diministred, white the pressure outward must be diministred, whatever arch, therefore, rises higher than a semicircle, ought to be preferred to one that is lower than it, where the pillar semicircle, ought to be preferred to one that is lower man in canable of sustaining a that supports it is of a slender form, and, of course, incapable of mutain powerful lateral pressure; and the higher such an arch is, the better it must be adapted for this purpose when considered simply under this point of view. But no single arch that can be devised (the catenarian arch alone excepted, and against this form of an arch for the purpose here required, if our artists were acquainted with it, they would very soon have discovered such valid ections as must soon have made them reject it) can be made to rise to such a height above a column as two small segments of a very large circle may be made to do by gradually approaching towards each other till they close at the top. Hence it follows, that, of all the forms of an arch that could be devised, where the principal object in view is to diminish the lateral pressure from a pillar, and convert it into a perpendicular pressure, more especially where the weight to be supported above is inconsiderable, that of the segment of two large circles is undoubtedly the best. Such was the reasoning of our artists, and such, no doubt, were the considerations which induced them with one accord to abandon the form of the semicircular arch which they had at the beginning incautiously followed, and to adopt that form of arch which so peculiarly characterises all the more perfect productions of this sagacious fraternity. But there were other reasons, which we shall afterwards discover, that still more powerfully operated in establishing the necessity of this choice.

That the reader, however, may be able to satisfy himself, by means of a very simple illustrative experiment, how far the circumstance just now explained ought to weigh in determining the choice of these artists. I shall beg leave once more to refer him to his books. Let him pile up a sufficient number of volumes in two heaps opposite to each other, and at some distance asunder, with their backs regularly towards each other. Let him raise them to a considerable height, both heaps at the same time inclining a little inwards. They will gradually approach, and at last will close, so as to touch each other at the top. These form no unapt representation of two segments of arches supporting each other. Both of these would fall down were it not for the support that the other affords. But what is the degree of force that must thus be applied to keep them from falling inwards; in other words, what is the degree of lateral pressure, in this case, compared to the perpendicular? Let a very tender substance be applied between them where they fall together at the top; it will sustain the pressure of both without being squeezed. Put your finger between the two; the pressure is so slight that you can scarcely perceive it. Thus have we got rid almost entirely of the lateral pressure, which was no powerful in the first instance adduced; instead of which, the perpendicular pressure is greatly augmented, and with it the power of the pillar itself to resist lateral pressure of every kind, as we shall afterwards see. Lift up the books now, and you will perceive with what a great weight they press perpendicularly upon the column. It would be unnecessary, I presume, to add any farther illustrations on this branch of the subject.

When two arches of the same sort are sprung from the top of the same

When two arches of the same sort are sprung from the top of the same pillar in opposite directions, they are such an exact counterpoise for each other, as to press upon the column in a perpendicular direction only; so that under these circumstances no lateral pressure can be experienced. In this manner a row of columns of any length may be made to support a roof, no one of which columns can have the smallest tendency to be pushed out of its place; or an indefinite number of contiguous squares of the same dimensions may be thus closed without occasioning the smallest derangement to the columns by inequality of pressure upon them. But that row of columns, however long, must at length come to an end; and the column at that end, having to support only one arch instead of two, must have its equilibrium destroyed; so that the pressure outwards would be such as inevitably to overturn it, unless the pillar

be of such dimensions as that the degree of lateral pressure it experiences shall not be sufficient to overcome the weight of the materials of which the pillar consists. There was a necessity, therefore, for augmenting the size of the terminating pillar greatly beyond the dimensions of those that were require in the inside. This circumstance gave rise to the external abutments on the outside of Gothic churches, which form such an essential constituent in that

style of architecture.

It can scarcely be necessary for me to observe, that a row of semicircular arches, or those even of a flatter form, would balance and abut each other equally well as those of a higher form, upon the top of each column in the row, were it not proper to remark, that there would have been a necessity of having the external abutments much more massy, and, of course, more clumsy and inelegant in arches of a flat form, than where they were raised to a greater height. It was not, therefore, without reason, that all those structures in which the semicircular arch was adopted had thicker columns and more clumsy abutments, than were necessary after they abandoned that form of arch; and we shall soon have occasion to observe that this circumstance would have had a tendency to deprive them of some elegancies and conveniencies which they were studious to obtain.

After our artists had advanced thus far, it is very evident that they had it in their power to cover with a stone roof an area of any assignable extent; for, by increasing the number of rows of columns, it might be made to extend to any distance in length or in width that should be required: but, as all the light must in this case have been introduced at the end of each row of columns only, and as all the columns must have stood at an equal distance from each other, the central part of the building, which they wished to be the most superb and conspicuous, would have been the most gloomy and obscure. This form of a building, therefore, though it had been on some occasions resorted to by the Romans, could by no means accord with the ideas of our more aspiring architects. They endeavoured to find out a way of obviating this difficulty: nor were they foiled in this, more than in many other of their bold and ambitious attempts.

They would easily perceive, after a moment's reflection, that if the rows of columns should be placed at a greater distance from each other in the middle of the building than elsewhere, the free space of the central area would be thereby proportionally augmented; and thus would one of the objects they had in view be obtained; and as the windows could also, in this case, be made larger there at each end than elsewhere, the other purpose would also be in some measure attained. But, in contriving how this enlargement of the central area could be effected, difficulties would occur that could not be easily

removed.

We have just had occasion to observe, that, whenever the row of equal arches is interrupted, the pressure becomes unequal upon the column where such break takes place, and its equilibrium is thereby destroyed. To keep it from being thus deranged, our artists found it necessary to erect abutments on the outside. Abutments would be equally necessary in the inside, where an inequality respecting the superincumbent pressure took place: but abutments similar to those that might be readily adopted on the outside could not possibly be admitted on the inside, without destroying the whole of the effect at which they aimed. This idea must then, of course, be rejected.

Reflecting upon this subject, it at length occurred to these acute artists, that it was by no means necessary they should confine themselves to that form of an abutment which had first occurred to them, and to which they hitherto adhered; viz. that of making an additional wall on the outside of the column. This wall, it was obvious, could add strength to the column in no other way than by depositing the weight of the materials of which such abutment consists contiguous to the column, all of which weight must be removed before the column can be suffered to stir from its place. It is further obvious, that as the pressure is chiefly at the top of the pillar, it can only be the weight

of the materials which constitute the higher part of the abutment that can tend to give stability to the pillar; all the materials which constitute the base of the abutment being of no other use than to serve as a support to bear to a proper height the materials that are alone of real essential service in this case. This idea could no sooner occur, than it must operate as a flash of lightning upon the minds of our acute observers, because it opened a wide field of most sublime speculations for their enlarged understandings to operate upon. But let us not be hurried forward too fast; let us follow them with attention, and carefully trace the steps by which these sublime ideas were gradually developed.

Let us suppose, for the sake of illustration, that the lateral pressure upon the top of a pillar, tending to push it out of its true position, is equal to ten hundred weight, and that a wall is reared as an abutment on the outside of that pillar to the same height with the pillar itself, and no more, for the purpose of resisting that lateral pressure. Let us farther suppose, that the materials of which this wall consists are equal to one hundred weight for every foot in height and in length. As the pressure is merely upon the top of the column, let us farther suppose, that the whole ten hundred weight will be required upon the first foot of the top of the abutment before the pillar could be properly secured. Under these circumstances it is plain that the wall of abutment must be ten feet in length to give the security required. But if the pillar be ten feet in height, the abutment must be so also; and, of course, the weight of the whole materials in the abutment will be ten times ten hundred, though only ten hundred weight is of any use. Here is a pure waste of nine tenths of the materials when they are employed in this form.

Let us now suppose that, in consequence of the discovery they had made, they might reason thus. If one foot of the abutment, that gives one hundred weight of the gravity required, be suffered to remain entire, take the next stone from the top of the wall, which is one foot in length, and place it upon the top of the former, this makes two hundred weight; the next stone applied in the same manner makes three; and so on, till the whole ten are piled one upon the other; when the weight of the whole is equal to ten hundred weight; the precise quantity that was wanted to give the pillar its necessary stability. The remaining part of the abutment may now be taken away as useless. These materials alone will now be sufficient to secure eight other pillars, by being applied after the same manner.

Here, then, we discover the origin and uses of the pinnacle, which, it is to be hoped, will be no longer vilified as a mere useless ornament; but will be considered as a very essential part of the building, tending no less to give stability to the pile than elegance to the structure. Hence also the origin of a phrase, pondus addit robur, which was almost proverbial among philosophers of all sects after the revival of letters in Europe. We shall by and by have occasion to point out the farther uses of this indispensable part of the building. However, the purpose would have been answered by leaving the whole weight upon the abutment itself only; but, as the diagonal pressure also must be resisted, it became necessary to lay some part of that weight upon the top of the columnitatelf; and, as they were thus enabled to give a wider base to the pinnacle, and, of course, less height to produce the same effect, this contrivance was naturally adopted; especially as it admitted at the same time of their giving a greater variety of form and proportions to these pinnacles than would otherwise have been practicable.

It was but a step farther,—and our artists seldom stopped short in the course of their investigations;—it was but a small step beyond the limits they had now attained, for them to ask, what was the necessity for having any abutment at all? Would not the column be equally firm and secure if, instead of having ten hundred weight, or even a greater weight if necessary, applied on the outside of it, the same weight were placed upon the top of the column itself? No answer to this question, but in the affirmative, can be given. The more it is considered, the more certain it appears. And now the film is

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removed from their eyes: the grand desideratum which had so long arrested their progress is now obtained. Let us, say they, instead of employing abutments in the inside of the church for securing the pillars, where they would prove an intolerable incumbrance, let us suffer these columns to retain their primitive shape; and let us only load them at top to give them the necessary stability. Let us raise a pinnacle above them to the necessary height. But what is the use, say they again, of a pinnacle at all? Is it not possible to load the column sufficiently, without making that load assume the form of an upright spire? Nothing is more easy. Let us raise a solid wall to such a height as we shall find necessary, above the arches that connect the pillars on each side the nave of the church; and, as in that case the whole weight of that wall must ultimately rest on that row of pillars, we can thus give them the pressure required, without either encumbering the church in the inside with abutments, or loading it with pinnacles on the outside. This idea no sooner occurred than its utility was instantly recognised, and the practice, of course, adopted.

When the mind broods long over a favourite subject, it gradually expands; every step in its progress confers upon it additional energy, and fresh acquisition of powers. By such a progress they would soon perceive that, if a wall could be raised above those pillars, nothing could prevent them from putting windows into that wall; and, if a roof could be thrown over the nave above those windows, they would then have the body of the church perfectly illuminated, which was the great desideratum that had hitherto stopped their progress. To support this roof, nothing else is required than to spring a set of higher arches from the pinnacle that rises above each column (in other words, from the side wall that these columns support), so as to close the middle area after the same manner as those of the side aisles had been already closed. One only difficulty stood in the way of this improvement, and this also they soon contrived to remove. It became necessary to have an abutment to resist the lateral pressure of these higher arches; and some method must be contrived to effect this. Probably the first idea that would occur on this head would be that of adopting pinnacles; but against this plan several objections would occur. Considering the small base on which alone they could be reared, and the pressure of the large arches, these pinnacles must have been raised to an inconvenient height. This might, besides, be productive of several inconveniences; among others, it would lay such a great load upon the slender pillar below, as might risk the bringing it down, should the slightest degree of inaccuracy accidentally take place in the erecting of that pillar. Is it not possible, say they, to contrive an external abutment to resist this pressure, without overloading the pillar, and without altering in the smallest degree any of the arrangements in the structure below? Impossible! No, nothing is impossible to the willing mind. These artists had so often surmounted what others had deemed impossibilities, that they did not stop here. They soon perceived, that if an arch were sprung from the base of the lower pinnacle, just where it rises above the apex of the lower arch, so as to abut with its apex upon that part of the wall from which the superior arches spring that cover the inside nave, the resistance wanted there would be obtained, without imposing any additional weight upon the columns below. Can you conceive a situation in which loud peals of lo PEANS would burst with such spontaneous ecstasy from the hearts of human beings, as upon this occasion would be experienced among all the members of this enlightened fraternity?

Such are the origin and uses of those external arches that have obtained the name of spasidrils, which are thrown over the roof of the lower side aisles, and which, as they support no roof directly above them, have been by many accounted mere useless appendages, that ought to be swept away as the idle whims of a set of ignorant artists. It will not be difficult, however, to decide to which of the parties concerned this opprobrious epithet will best apply.

other face can be seen, which will also be a right-angled pa-ART. V. Perspective. By J. R.

Can three sides of a right-angled prism, orthographically represented, be seen in the projection, if one side is represented as a true square, or as a right-angled parallelogram?

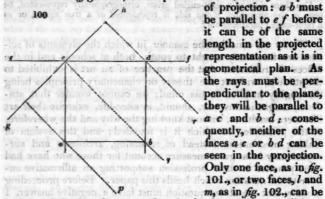
WHEN we consider the manner in which the elements of science are frequently taught to youth, both at schools and in the offices of architects; that the practice of an art is exhibited to the student, without the theory or elementary principles being thoroughly instilled in his mind; we cannot wonder that students, taught in this way, should, in after-life, exercise their art like mere machines, without knowing the why and the wherefore, or the principles on which it is founded; and this system of making mechanical, instead of reasoning, architects and surveyors may in a great measure account for those who have had some practice in their profession supporting an affirmative answer to the question which heads this paper. Before proceeding to show that the above question must have a negative answer, I shall first make a few necessary preliminary remarks for the sake of the general reader.

There are, properly speaking, only two kinds of projection: radial projection, and orthographical projection. The lines or rays of the former radiate to a point; the lines or rays of the latter are parallel. Under radial projection are comprehended oblique perspective; parallel perspective; birdseye oblique, and birdseye parallel, perspective. Under orthographical projection are comprehended, isometrical projection, and all angular or parallel representations delineated orthographically. different kinds of perspective comprehended under the head of radial projection are all projected on the same principle; and the different kinds of orthographical projection are likewise all projected on the same principle: the different names given to the different kinds in each section being merely to denote the different positions in which the objects projected may be placed with relation to the eye and to the plane of projection.

In radial projection, or perspective, it is a fixed rule that the plane of projection is placed perpendicular to the axis of the visual rays from the objects to the eye. (In some cases in parallel perspective there would appear an exception to this rule; but that it is as strictly applicable to this mode of representation as it is to oblique perspective, I shall endeavour to show in my next.) In like manner, it is a fixed rule that the parallel rays by which the projections of orthographical representations are made are perpendicular to the plane of projection. This being the case, let us now prove that if one face of a cube be orthographically projected as a right-angled parallelogram, only one

other face can be seen, which will also be a right-angled parallelogram.

Let a b c d (fig. 100.) be the plan of a cube, and e f the plane

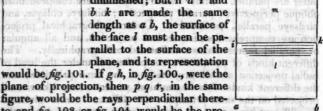


of projection: a b must be parallel to ef before it can be of the same and and enlength in the projected representation as it is in and in the sale geometrical plan. As the rays must be perpendicular to the plane, they will be parallel to a c and b d; consequently, neither of the faces a c or b d can be add roll for a seen in the projection. Only one face, as in fig. 101, or two faces, l and

seen; and the length a n, or b o, in the latter figure, will bear the same proportion to a b that the hypotenuse does to the side of a square. The faces l and m need not be represented equal,



but in proportion as the one a 102 is increased the other is diminished; but if a i and b k are made the same dength as a b, the surface of the face I must then be parallel to the surface of the plane, and its representation

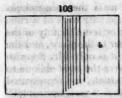


plane of projection, then p q r, in the same figure, would be the rays perpendicular thereto, and fig. 103. or fig. 104. would be the pro-

jection : of course, the faces shown in these two figures need not be equal.

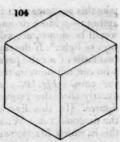
Therefore, if one face of a right-angled prism be projected as a right-angled parallelogram, only one other face can be seen, which will also be a right-angled parallelogram; because the rays by which these two faces are projected are parallel to the other faces which are at right angles to them.

If stuv (fig. 105.) be the projection of one face of a cube whose plan is fig. 100., then, to represent s t the same length as it is in the geometrical plan, it must be parallel to the plane; and if st be parallel to the plane, of course uv will also be parallel to it; and to represent su and t v the same length as stor up, they must also be parallel to the plane: therefore



the faces x and w could not be seen, because they are parallel to the rays, and consequently perpendicular to

the plane. But if s u formed an angle with the plane, a part of the face w would be seen (as m, in fig. 102.); or if



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s t formed an angle with the plane, a part of x would be seen (as δ , in fig. 103.); but in no case could the two faces w and x be both seen, if the third face s t.u v be represented as a true square, and the angles right angles.

I have considered it necessary to be thus verbose, in order to obviate any mistake which might have arisen from a laconic description. It has here been shown that three faces of a cube cannot be exhibited by orthographical projection in any case, except when none of its boundary lines are parallel to the

plane. Hence the want of principle in figs. 4, 5. 7, 8. 10. and 11. of plate xvii., and figs. 1. and 2. of plate xxiv., of a work recently published by Mr. Sopwith of Newcastle. The false representation of figures, such as the above, is the result of blindly following, in orthographical representations, the method of parallel perspective, without keeping in view that the very circumstance of the lines of the former running parallel prevents the application of the principles of the latter to it.

This inconsistency I shall notice in my next letter on parallel perspective.

Paddington, March 24. 1835.

P. S.—Mr. Sopwith assures us, that "parallel projection has, indeed, been strangely neglected in this kingdom." He is right. His book, and his remarks on my notice of it, bear striking evidence of the fact. We are told by this gentleman that the rays from an object are perpendicular to the plane: so far good; and then we are directed to hold the model of a wire cube in the sunshine, "so that its shadow may fall on a sheet of paper parallel to any two opposite surfaces of the cube; in which case eight of the boundary lines or edges of the cube would be parallel to the plane of projection." Now, reader,

take this sentence with the following, and mark the disingenuous author: - " More or less of one or two adjoining sides of a cube would be shown, according to the greater or less obliquity of the rays of light." If the rays are perpendicular to the plane, and the two faces of a cube parallel to the plane, it is only Mr. Sopwith who can tell how, in this case, we can have the rays oblique to the cube. Fig. 105., in the foregoing article, is represented exactly after the manner of Mr. Sopwith's "verti-horizontal" figures. In this figure, the diagonal ty is much greater than the diagonal tu. What an ingenious and convenient system this is, which Mr. Sopwith has found out! He can, by it, squeeze out to a greater length the diagonal of the face of a cube, than its actual geometrical length! Projection will, I fear, continue to be "strangely neglected in this kingdom," if such reasoning, and such illustrations, are to be its only support. The science of perspective would dread the friendship of such advocates as our author.

I hope that Mr. Sopwith will find more real substance in the preceding remarks than in shadows from the wire cube. He will perceive that these remarks (which I defy him to controvert) have established the want of principle in certain figures in his work. Therefore, I beg that he will take back with interest the "drawings which will remain a testimony of his own want of knowledge," &c. If he wishes to hear farther on this subject, I shall do my best to bring other objects before his vision, which he now only appears to see in the distant perspective; objects which will radiate to the same point, namely, to show that his Treatise on Isometrical Projection (apart from the other information it contains) is neither the best, nor yet the most correct, work that has appeared on the subject.

J. R.

ART. VI. An Attempt to explain the Elements and Principles of Gothic Architecture to the general Reader. By J. A. Picton, Esq., Architect.

(Continued from Vol. I. p. 333.)

WINDOWS. — Before proceeding with the subject, it may be well to assign some reasons for what many will consider the unpardonable omission of all notice of Saxon architecture in this classification of the Gothic. The object of the present series of articles is not to instruct the architect or the antiquary, but to offer a general view of the subject to those who have not before studied it; and to illustrate the progress of Gothic architecture by reference to buildings of acknowledged date, without entering upon any debatable ground. The fact is, notwithstanding all that has been written on the subject of Saxon architecture, it is

still open to discussion as much as ever. It would be difficult, perhaps impossible, to prove demonstratively that any existing remains are of the Saxon era; yet there are strong grounds for the supposition that parts, at least, of buildings now in existence were erected during that period. In antiquarian researches, dates and documents are of essential importance; in the absence of these, we are affoat on a sea of doubt and conjecture, without helm or compass. It is only from the period of the Conquest that we tread on firm ground, and can verify our opinions on the progress of the art by reference to buildings, the date of whose erection is ascertained beyond controversy. With this apology to those who may deem it necessary, I will proceed to the consideration of Gothic windows.

The windows of Gothic edifices, from their pleasing variety of form, their frequent magnitude and richness of decoration, and the brilliant hues of their stained glass where it still remains, generally attract the attention and interest the mind of the casual observer more than any other portion of a building, while to the architectural antiquary they offer an almost inexhaustible fund for study and observation. In many of the other details of ecclesiastical architecture, the variations of style are blended together by such imperceptible gradations, that it requires a well practised eye to discriminate the slight shades of difference; but, in the windows, the distinctions are so broad and well defined, that a very little attention will enable any person of ordinary capacity to assign its proper date and class to most of the windows which may fall under their notice.

It may seem a gratuitous piece of information to remind our readers, that windows are apertures for the admission of light and air; yet, in this and every other art, a little attention to the end proposed, as compared with the means of attaining it, will go far to elucidate its progress. The forms of architecture are essentially modified by soil, climate, and the nature of the building materials available; indeed, the whole history of Gothic architecture affords a beautiful exemplification of the mode in



which the arts of life accommodate themselves to the varying circumstances of society. At the time of the Conquest, and for a long period subsequent, glass was extremely scarce and dear: glazed windows would, therefore, naturally be few in number,

small in their dimensions, and confined to large and costly edifices. At the same period the smaller churches were lighted either by small circular apertures, as at fig. 106. (from Framlingham Earls, Norfolk), or by





narrow upright slits, a few inches wide, with circular arches, as at fig. 107. (from Gillingham, Norfolk). Mr. Britton remarks that these windows were evidently never intended for the insertion of glass, from the absence of any rebate or check in the stone for its reception. Although these apertures were splayed off in the inside to a considerable width, to afford as much

light as possible, yet the interiors must have been dark and gloomy in the extreme; so much so, that very few openings of this early character remain, having generally been displaced by the

> "Storied windows, richly dight, Casting a dim religious light,"

of a subsequent period. Fig. 108., from St. Albans Abbey church, is a specimen of a double window of early Norman character, clumsy in its design, and rude in execution. The large plain arch, springing from square piers with imposts, illustrates the Roman origin of the style. The column shafts



are sometimes omitted, and zigzags and other ornamental mouldings carried completely round the window. These mouldings and column shafts gradually assumed a lighter character, preparatory to an alteration taking place in the form of the arch, which eventually led to a radical change in the whole system of ecclesiastical architecture. The church of St. Cross. Hamp-

shire, erected in 1136, by Henry de Blois, brother of King Stephen, is generally admitted to be the first building in England in which the pointed arch was displayed. Fig. 109. shows part of an intersecting semicircular arcade, forming the triforium or gallery over the chancel of this church. Arcades of this description form a very common decoration of Norman churches, and wherever they are used, it is evident that the shape of the pointed arch is formed; but this is supposed to be the first

instance of an aperture of this shape being pierced through the wall as a window, and forming a self-supported arch. But however this may be, very soon after this date the pointed arch came into general use, though not immediately, to the exclusion of the esmicircular one; for, during the remainder of the twelfth

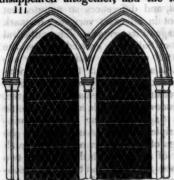


century, we find the two arches used in conjunction, sometimes the semicircular over the pointed ones, and sometimes under them; and, in a few instances, as at Barfreston church, Kent, arches of both forms, springing from one stringcourse. During this transition from one order to another, there appears to have been some confusion in the style of decoration adopted. We see, not unfrequently, semicircular-headed windows with the slender column shafts and undercut mouldings of the early pointed era, as at St. Cross, mentioned above: at other times, pointed arches supported by columns of the massive proportions be-

longing to the Norman period. In either case we may, with great safety, assign any such examples to the latter half of the

twelfth century.

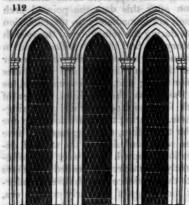
About the year 1200, or very soon after, the semicircular arch disappeared altogether, and the long lancet windows became



firmly established. These were at first single, as in fig. 110., an early specimen from Chichester Cathedral; afterwards double, as in fig. 111., from Salisbury Cathedral. Sometimes we find three of equal height, as in fig. 112., from Beverley Minster; but more frequently the centre light raised, as in fig. 113., from the Temple Church; and, occasionally, five or even seven lights, with a dripstone

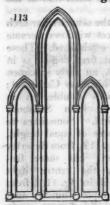
sometimes embracing the whole. As the thirteenth century advanced, more ornament began to be introduced; the unsightly appearance of the head of the double lancet window was avoided by inserting a circle between the heads with a dripstone over. About the same time commenced the foliation, or feathering, of these circles and window heads, perhaps the most elegant and

characteristic ornament of the Gothic style. This continued until towards the close of the thirteenth century, when a further



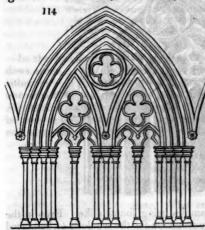
change took place. Up to this time, although three, five, or seven lights might be combined together, yet, the divisions between them being the full thickness of the wall, each light, in fact, constituted a separate window, the arch being entirely distinct, and only united by a dripstone over all. Under these circumstances, any thing like tracery was manifestly impracticable. About the latter end of the thirteenth century,

these separate lights, or bays, began to be united into one window, by an arch surmounting the whole, and extending through the wall. The heavy divisions became now no longer necessary, and were accordingly superseded by the light mullions and



tracery of the decorated period. This transition, although tolerably rapid in point of time, yet advanced by steps so gradual, and differences so minute, that it is not in all cases very easy to mark each stage of its progress. The cathedral church of Salisbury, erected between the years 1220 and 1260, and generally admitted, as a whole, to be the finest specimen extant of the early pointed, exhibits this transition in a remarkable degree. The windows of the side aisles are double lancets (fig. 111.); the clerestory windows triple lancets, as in fig. 113.; the openings of the triforia or galleries each consist of a large arch divided into two parts (see fig. 114.), and these again sub-

divided, with quatrefoiled circles cut in the flat space between the heads. Here we clearly discern the germ of the subsequent geometrical tracery. This is still farther developed in the magnificent windows of the chapter-house commonly attributed to Bishop Bridport, who died in 1262: these, likewise, consist of four bays each, with a large foliated circle at the apex, and two smaller ones below. Here, however, the circles and arches, instead of being cut into a solid space, merely touch at the points, and do not extend the full thickness of the wall. From the lightness of the shafts, or mullions, of these windows, and their



general elegance of form, we are led to connect them with the eastern windows of Lincoln Cathedral. erected 1306, to which they bear a striking affinity in character. The great east window of Lincoln contains eight bays, or lights; the tracery, which consists entirely of combinations of foliated circles, is too complicated for insertion here; but fig. 115. shows the windows of the side aisles, which

are of the same date, and of similar character.

These combinations of geometrical diagrams, circles, triangles, &c., however varied, becoming soon exhausted, compound curves

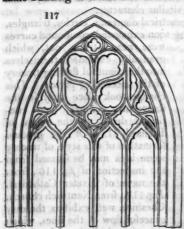


were next struck out, which gradually extended themselves into the beautiful flowing tracery of the succeeding period. This change took place early in the fourteenth century, and continued down to the reign of Richard II. Of the gradual formation of this style of tracery some idea may be formed from the inspection of fig. 116., from the nave of Exeter Cathedral. Fig. 117., from Nantwich church, Cheshire, well exhibits the easy graceful flow of the lines, which preeminently distinguishes the decorated tracery. Fig. 118., from the choir of Tewkesbury Abbey

church, shows the radiated wheel, a very common mode of finishing circular windows, but not very frequently introduced into the tracery of pointed arch windows. To multiply specimens, however, would be fruitless, as the variety is almost



infinite, scarcely two examples being found alike. Even in the same building it is not uncommon for the windows to be placed

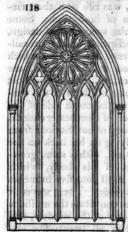


in pairs, all the windows on one side differing from each other, but corresponding with those on the opposite side. Exeter Cathedral is an example of this mode of arrangement, which, it will readily be conceived, must have required a fertility of imagination and an extent of resource almost inexhaustible. Some of the finest specimens of the east and west windows of our cathedrals are in this style. The west window of York Minster, consisting of eight lights, and the east window

of Carlisle, and west window of Exeter, cathedrals, of nine lights each, are the most celebrated. Fig. 119. shows the west window of Durham. The east window of Lincoln has been already mentioned. It is to this style of tracery that Scott so beautifully refers, in his description of Melrose Abbey, in the Lay of the Last Minstrel:—

The moon on the east oriel* shone
Through slender shafts of shapely stone
By foliaged tracery combined;
Thou wouldst have thought some fairy's hand
Twixt poplars straight the osier wand
In many a freakish knot had twined;
Then framed a spell when the work was done,
And turn'd the willow wreaths to stone."

In the fourteenth century the first specimens of square windows occur. We are not aware of any windows of this shape either in the Norman or early pointed styles. They are not uncommon at this period in the side aisles of small churches. Fig. 120. is from Runcorn church, Cheshire. The square form became gradually more and more affected during the fifteenth and sixteenth centuries, particularly in domestic architecture,



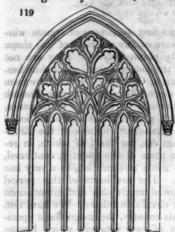
until it produced the huge mullioned and transomed windows of the Elizabethan era, the form of which, in remote parts of the country, continued, with some modification, to a very late date. The architects of this period bestowed much care and attention on their circular windows. We have not. in this country, the magnificent specimens of rose windows which France and Germany can boast of: but the finest examples we possess are of this age. There are a few specimens of circular windows in the Norman style, as at Barfreston and Patrixbourne, Kent; but in the thirteenth century they become more numerous. The earliest of these windows consists generally of spokes or balusters radiating

from a centre, with foliated heads. Of this description are the windows in the south transepts of Beverley and York minsters. At the latter end of the thirteenth and the beginning of the fourteenth centuries, these circles were filled in with geometrical diagrams of the same description as the tracery in the pointed-arch windows of the same period, as in the north transept of Lincoln Cathedral. Towards the middle of the fourteenth century, radiated circles again occur; the spokes or rays had, however, become simple mullions, without caps and bases, the

^{*} By the by, the great Bard of the North is here as erroneous in his architecture, as he is in Marmion and in Itanhoe in his heraldry. The term oriel always implies an angular projecting window, and is never applied to the east window of a church. Sir Walter's antiquarian knowledge was great and unquestionable, but "Aliquando dormitat bonus Homerus."

mouldings being carried round the arched heads. Wheel windows, with flowing tracery, are not frequent in England. A richly ornamented window of this description, decidedly the finest in the country, occurs in the south transept of Lincoln Cathedral.

It is generally admitted, that about the reign of Edward III.



Gothic tracery had reached its highest point of excellence; but although the elegance of its forms, and the graceful play of its flowing outlines scarcely admitted of alteration without deteriorating its beauty, the spirit of that age, in architecture at least, was rife with the principles of innovation. Some singular specimens of design, the offspring of the prevailing rage for novelty which existed at that period, are still extant. One of the most singular of these is the window on the north side of the chancel of Dorchester church.

Oxfordshire, which describes the genealogy of our Saviour from the patriarch Jesse, who is represented lying on his back on the



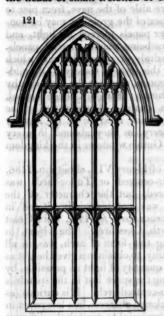
window sill, with a stem growing out of his body, which divides itself into five branches on each side. These stems or branches constitute the mullions and tracery of the window, and support in all twenty-five statues, the progeny of the patriarch, thus illustrating Isaiah. chap. ii. ver. 1 .: "And there shall come forth a rod out of the stem of Jesse, and a branch shall grow out of his roots." In the east window of a small church at the village of Llanrhaiadr, Den-

bighshire, between Denbigh and Ruthin, I have observed the same design, but executed in stained glass, and apparently of

rather later date than the above described.

In the reign of Richard II. the transition took place from the decorated to the perpendicular style of tracery, which continued, with little material alteration, to the period of the decline and

extinction of Gothic architecture. The flowing lines now grew into disuse; in their place the mullions began to be carried up in straight lines to meet the arch of the window, the spaces between being divided into panels by mullions springing from the heads of small trefoiled or cinquefoiled arches (see fig. 121.



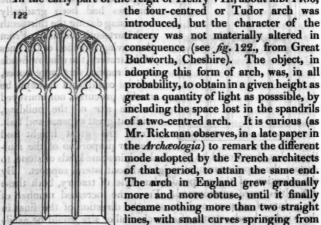
from Bath Abbey church): hence the origin of the term perpendicular, from the general prevalence of vertical lines. Cross mullions, or transoms, now began to be introduced. dividing the windows into several stages, or compartments. vertically, which still farther increased the stiff paneled appearance. It is not difficult to imagine the process by which this change took place. The height and breadth of the windows had been gradually increasing during the thirteenth and fourteenth centuries. From the waving direction of the lines of the tracery, the window heads would require very large stones, which could not always be readily procured, nor conveyed to the site of the building, without great expense and risk. From the great height and slender proportion of the mul-

lions, also, they would be ill calculated, in some kinds of stone, to sustain the superincumbent weight without lateral support. By the adoption of the perpendicular style of tracery, both these difficulties were surmounted. From the increased number of the points of support, and the straight direction of the lines in the window heads, stones of a much smaller size would be available, whilst the transoms afford all the necessary lateral support.

Although the spirit and imagination which distinguished the preceding style was but poorly exchanged for the minute ornament and endless repetition of that which succeeded; yet it must be confessed, that, in the latter, all which richness of decoration and magnificence of design, combined with magnitude of dimensions, could effect, has been produced. The impediments above mentioned being now removed, the size of the windows rapidly increased; particularly the east and west windows of conventual and cathedral churches, amongst which the most

magnificent, if not the most beautiful, specimens belong to this era. The east window of York Minster is generally considered to be the finest perpendicular window in Great Britain. The west window of Winchester Cathedral, built by William of Wykeham, who died in 1404, is also deserving of special notice. The whole extremity of the centre aisle of the nave, from pier to pier, and from the floor to the apex of the groining, may be considered as one window; the upper panels pierced for light, and the lower panels blank, the doors being merely pierced panels. There are very few of our cathedrals or abbey churches which do not contain some windows in this style of tracery. Of buildings wholly erected during this epoch, amongst the most worthy of mention are, Bath Abbey church; King's College chapel, Cambridge; and Henry VII.'s chapel, Westminster. The readers of the Architectural Magazine need be at no loss for specimens of perpendicular tracery, as they abound in every county; full two thirds of all the Gothic windows in the kingdom being of this character.

In the early part of the reign of Henry VII., about A.D. 1486,



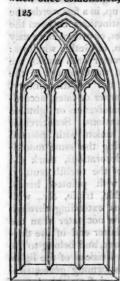
the piers (see fig. 124.); in which form it occurs in door heads, &c., in remote parts of the country down to the end of the seventeenth century; but still, the central point



was never dispensed with until the final abandonment of the style. In France, on the contrary, in order to gain height, the

elliptic, or three-centred, arch was adopted early in the sixteenth century, if not previously. This, as in the former case, gradually flattened in its contour, until it terminated in a straight line, connected with the jambs or piers by small curves. (fig. 123.) This circumstance, it will readily be conceived, confers an entirely distinct character on the architecture of the sixteenth century in France and England, giving to the former a much more Italianised appearance. In English windows, of late perpendicular character, the smaller curves are sometimes dispensed with; the arch assuming the pointed segment form, as in the Collegiate Church, Manchester. In a few instances the window heads are formed by two straight lines, meeting in a point, without any curve; but this rarely occurs in church architecture.

There are two circumstances worthy of mention in reference to the perpendicular style of tracery. One is, the rapidity of the transition to this style from the decorated, with the fact that, when once established, it experienced little change in character.



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as may be proved by comparing the north window of Westminster Hall. built before the end of the fourteenth century, with the clerestory windows of its opposite neighbour, Henry VII.'s chapel, erected considerably more than a century later. This fact would certainly seem to confirm the idea thrown out above of the origin of this style of tracery. The other circumstance is, the extreme inequality in the designing and execution of work during the perpendicular period. In the early pointed and decorated styles, the designs are almost always characterised by a considerable degree of vigour in the conception, and carefulness in the execution. In the perpendicular styles, whilst we have many splendid specimens of architectural taste and beauty, it must be acknowledged that much of the work displays great tameness and poverty of idea in the design, and frequently con-

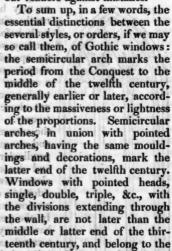
siderable rudeness in the execution. This is particularly observable in many small churches, and additions to churches, erected in the early part of the sixteenth century. Since the taste for pointed architecture has revived, it has become too much the custom to profess admiration for the architecture of every building erected previously to the Reformation. This may be called both literally and metaphorically, a Gothic taste. In this in-

99 126

discriminate admiration, I must confess, I cannot sympathise. My antiquarian predilections are not sufficiently strong to enable me to feel veneration for any building simply on the score of its age. To excite a legitimate feeling of respect, an edifice ought either to possess some intrinsic claims to excellence, or to be the means of exciting, by association, a train of ideas of a pleasing or improving character. In default of either of these recommendations, a blind admiration for antiquity, must be considered, at best, but as a spurious and doubtful sort of taste, more calculated to mislead and delude its votaries, than to produce any desirable results.

The above sketch will be found, as far as it goes, to give a tolerably correct statement of the progress of Gothic tracery in

this country; but before concluding, it will be necessary to mention a few farther particulars, to guard our readers against mistakes.



Early Pointed Order. Tracery, with the divisions of the lights not extending through the wall, the heads forming geometrical figures, belongs to the Early Decorated, and fixes the date of the windows in the first half of the fourteenth century. Tracery in flowing lines is not found later than the end of the reign of Edward III. or the beginning of that of Richard II. The upright paneled tracery belongs to the Perpendicular Division, from the end of the fifteenth century to the time of the Reformation. Windows with Tudor arches must have been erected subsequently to and 1485. These are the general principles; a

to of

few exceptions, apparent, not real, must now be noticed. There are one or two forms of tracery common to both decorated and perpendicular windows. One is shown, fig. 125., from Nantwich church, the mullions simply crossing each other, and the spaces between feathered. If this occurs under a Tudor arch, its date is clearly marked. If the featherings are merely formed in the hollow of the mullion, and the square fillet not carried round with the featherings it belongs to the perpendicular; if, on the contrary, the fillet itself is feathered, it belongs to the decorated, period. Another form, which is common to both periods, and



may be detected by the same tests, is fig. 126., from Great Budworth. In all similar cases there are differences in the style of the mouldings, &c., which a practised eye will immediately discover, and which will be noticed hereafter. It happens sometimes that the forms of an earlier style are used, combined with the mouldings and details of a later date. Thus we sometimes meet with awkward attempts at flowing tracery under a Tudor arch, as in fig. 127., from Astbury church, Cheshire.

Another source of confusion to a novice is, the circumstance of arches in one style being frequently filled in with tracery belonging to a subsequent period. In the side aisles of St. Nicholas's, Gloucester, there are Norman arches, with perpendicular tracery inserted. A striking instance, also, occurs at the west end of

Tewkesbury Abbey church, where a fine deeply recessed Norman arch, upwards of 60 ft. in height, has been filled in with late perpendicular tracery. The wheel windows in the transepts of Westminster Abbey have tracery evidently more recent than the windows themselves.

As a rule of very general application, it may be useful to be mentioned, that no part of a Gothic building (of course excluding modern restorations) is found older than the doors, or more recent than the windows. This rule may admit of some exceptions, but they are exceedingly few. The reason of it will readily appear. From the small size of the early windows, as stated above, and the gradual increase in their dimensions as the style progressed, it will easily be conceived, that the windows would be more frequently enlarged and altered than any other

feature of an edifice. Hence it happens, that, where any of the small early windows have escaped destruction, they are always accompanied by larger windows of a later style. The same necessity did not exist for altering doors, so that we have remaining a much greater number in the early styles. It is by no means uncommon to find a Norman or early pointed doorway, and all the rest of the building of a much later character. This rule, however, only applies to the exterior of churches; the outside walls being sometimes entirely rebuilt, whilst the interior displays a style several centuries earlier. Of this, St. John's

church, Chester, offers a good example.

This article has been necessarily more minute, and has extended to greater length, than will be needful in future papers; the window in Gothic architecture, like the column in the Grecian, being at once the most distinctive feature, and the member to which the other parts are in a great degree subordinate. Considering the widely diffused taste for Gothic architecture at the present day, the prevailing ignorance of its true principles appears most marvellous. Many persons seem to think that nothing more is necessary than to heap together clustered columns and pointed arches ad libitum; and would treat with the most magnanimous contempt any attention to dates in the forms of the mouldings, or consistency in the style of tracery adopted. I have known a person, professing to be an 'architect, mistake a common Venetian window, erected sixty or seventy years ago, for a genuine Norman arch; happening, as it did, to be in a church. I trust that, by the time these sketches are completed, your readers will hardly err to this extent.

The next article will be on the general plan of Gothic ecclesiastical edifices, and a description of their various parts.

Liverpool, December, 1834.

yers at the west end of

ART. VII. The Dwelling-Rooms of a House. By J. J. KENT, Esq., Architect.

(Continued from Vol. I. p. 308.)

THE Dining-Room.—This, in England, is a room of great importance, particularly with the rich; for nothing with the English can be done satisfactorily without the accompaniment of a good dinner; and, indeed, some think this is the only thing that in its fruition fulfils the anticipated pleasure. The dining-room is a place in which the host displays much of his wealth and taste, and where, if he be a sporting man, he hangs the portraits of his favourite hunters and dogs, that he may refresh his memory of their exploits, and thereby obtain pleasing subjects of display and self-gratification.

This room should be quiet, and unconnected with any other except a library or store-room; and with the latter only by an opening at the back of the sideboard, or in some other part where it may be concealed, and through which the dessert, &c., may be handed; thereby preventing the too frequent opening and shutting of the door. There should not be any door of communication with the store-room; as, being liable to be occupied by servants, it will destroy the privacy of the dining-room.

The accessories to the dining-rooms of the rich are the ante, or waiting, room for servants, and a retiring-room for gentlemen; though they should not either of them communicate immediately with the dining-room, but should be approached through

a lobby. all the te horace it syleaner has b

The dining-room should never be less than 14 ft. wide; and even then it will not admit of furniture being placed against the sides of the room. A width of 14 ft. is requisite to enable the servants to pass round the table safely with the dishes. In houses of a superior class, this room should be 18 ft. or more in width, in proportion to its length; and it should be lofty and well

ventilated.

The floor of this room, as of all good rooms, should be pugged to destroy sound. The sides of the floor are often left uncovered, the carpet not reaching to within 18 in. to 24 in. of the skirting; but even in this case it should be bordered, as Turkey carpets are, to give the idea of completeness. The floor boards should be of the best description; and, where the sides of the floor are to be left exposed, such portions are frequently executed in oak or wainscot, and sometimes framed in panels, or parquetted, as described in the *Encyclopædia of Cottage*, Farm, and Villa Architecture, p. 1013. When so done, they should be kept polished by dry rubbing.

There should be a dado round this room, from 2 ft. 3 in. to 2 ft. 9 in. high, to preserve the wall from being injured by the

furniture, and to give importance to the room.

The general character of this room should be more subdued and sober than that of the drawingroom, or, indeed, of any of the dwelling-rooms, except the library. The most suitable colour is wainscot, for the doors, dado, and windows; and some other warm tint to harmonise with it, for the walls above the dado: the choice of the latter must depend on the taste of the occupier; but few colours look better than a deep crimson paper in flock, either plain or figured, with gold or wainscot mouldings, where paintings or prints in frames are hung. It is better to have the walls painted than papered, and the frames hung by strong cords from brass or painted iron rods, laid on hooks close under the cornice. The ceiling and cornice should be very

lightly tinted, to agree with the colour of the walls; and the

enrichments of the comice should be relieved.

The ceiling in this room may be paneled and enriched with paper, or plaster-cast ornaments and flowers, for lamps or chandeliers to hang from. The cornice should be bold and enriched, in proportion to the size and style in which the other parts of the room are finished. Where height sufficient can be obtained, a cove, either plain or ornamented, may be introduced with good effect.

A recess should be constructed for the sideboard, if possible; at all events, some preparation should be made to receive it.

The chimney-piece should be of dove, or black, or black and yellow, marble, bold and massive. If carved at all, the carving should be in masses, and in high relief: the character of the chimney-piece should be architectural, and in keeping with the style or order used in the room.

Means should be provided for ringing the bell without rising from table; and this might be effected by pressing the foot on a knob under the table, or by lines passing through pulleys and under the carpet to the chairs occupied by the master and

mistress of the house or been the last moon sult to real sail

There should not be any closets in the dining-room. If it be thought necessary to have the means of putting any thing away in the room, beyond those afforded by the sideboards, pieces of mahogany furniture, French polished, such as chiffoniers, &c.,

might be introduced. et credw , ban a noisy rest to

The doors, if not painted like the window and dado, may be of mahogany, highly polished: in that case they should be wide and folding; and there should be double doors to every doorway. The sashes and beads of the windows should then be mahogany also. The windows should be large, and brought down to within about 2 ft. 3 in, of the floor.

The knobs to the shutter-latches and to the locks should be of turned dark wood, or of cocoa nut, inlaid with ebony.

The whole of the furniture, as the dining-table, chairs, sideboard, and chiffoniers, should be mahogany, French polished. The frames to the looking-glasses may be of oak inlaid with ebony; unless there are gilt picture-frames hung in the room; in which case the frames to the looking-glasses should be gilt also, as likewise the carved cornice over the curtains.

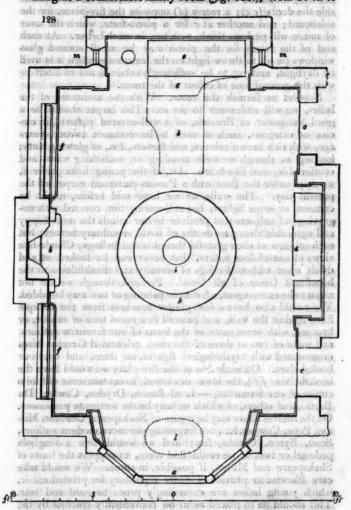
The curtains should be a geranium or a fawn colour, with

broad lace and fringes.

These observations apply more to the dining-room of the man of rank, which is strictly and exclusively a salle à manger, than to that of persons in the middle class of life. Where the dining-room is also the library, and, indeed, the only family room, except the drawingroom, the following sketch will

give some idea of one which, in my opinion, is capable of fulfilling all we can desire in such a room:—

Imagine a comfortable family room (fig. 128.), from 20 ft. to



24 ft. long, 15 ft. to 18 ft. wide, 11 ft. to 13 ft. high, with the bay window (a) looking to the north, or perhaps a little west: this might be large, and reach down to within 6 in. of the floor,

see also p. 231-4 ff. p. 284.

so that a view of the distant country, no less than of the adjoining flower-garden, might be commanded by it. The fire place (b) should be on one side of the room, and on the opposite side the doors (c c); a recess (d) opposite the fire-place, for the sideboard; and another at e for a piano-forte, which the lover of music will perhaps think, with me, is much better. At each end of the recess for the piano may be small stained glass windows (m m), to throw light on the instrument when it is used by daylight, and yet to be sufficiently subdued not to interfere

with the general tone of colour of the room.

Now let us furnish the room. With the assistance of the ladies, we will endeavour to do so. The carpet should be a good Axminster or Brussels, of a well-covered pattern, in circles or octagons, such as used to be common twenty years ago, with rich brown colours, and flowers, &c., of glowing tints; looking as though we were treading on something warm and comfortable, and like home. Or, if the young folks prefer it, we may cover the floor with a Persian-patterned carpet of the present day. The walls, as we have said before, might be crimson, or some lighter, but still warm, tint, covered with engravings of subjects that produce in our minds the most happy and agreeable ideas: no deaths of naval or military heroes; but such subjects as elicit grateful thoughts and feelings; Claude-like views of out-of-door nature, that never can be looked at and dwelt upon without feelings of serenity and thankfulness to the beneficent Giver of all Good. Perhaps, though we do not mean to be extravagant, a favourite painting or two may be added. We would also have a few plaster brackets from the antique fixed against the wall, and painted in a warm tone of colour, or bronzed, with some casts of the busts of our favourite authors, and some of two or three of the most celebrated Grecian vases ornamented with mythological figures, on them, and over our bookshelves. On each side of the fire-place we would have the bookshelves (ff), the lower one broad, to contain some old folio copies of our favourites, - Lord Bacon, Dryden, Cowley, Du Bartas, and others, of which we may be the fortunate possessors. On the shelves above may be copies of Shakspeare, Chaucer, Milton, Pope, Cowper, &c., not forgetting our more modern authors, Scott, Byron, Crabbe, &c.; and we would have a scagliola pedestal or two, if we could find room, to support the busts of Shakspeare and Milton, if possible, in stone. We would take care likewise to provide a secure repository for printed music, which young ladies are exceedingly prone to rend and tear. This should be so placed as to be conveniently reached by the performer, and should be divided so that the music may be classified. We would moreover have one or two music desks near the piano-forte, made to fix on brackets, for those who may perform accompaniments; and, as we have not room for a

grand horizontal piano, we will choose one of Wornum's new horizontal semi-grands, which, with a facetious perversity, he terms "pocket grands:" these instruments having a tone like an organ. But, had we room, and could afford it, we would most assuredly possess one of Erard's horizontal grand pianofortes, not only for its magnificent sound, but for its extraordinary freedom of touch; in which respect it equals the very best German instruments, while it surpasses them in every other. If the horizontal piano be preferred, it may either stand in the same position as Wornum's, as indicated by the dotted line g, or project into the room, as indicated by the dotted line h.

The furniture of the room we will have of mahogany, consisting, besides what is already named, of the dining-table and chairs, which should be solid and substantial, and of the finest wood, but plain and uncarved; the whole beautifully French polished. The dining-table we prefer to be circular, which our friends can really sit round, see and be seen, speak and be spoken to; such, in short, as is described in the Encyclopædia of Cottage, Farm, and Villa Architecture, p. 829., " as a circular table (i), in its ordinary form, capable of dining eight persons; and by the addition of marginal rims (k), each 20 in. broad, of dining twenty persons." Of course, the size of these additional rims will depend upon the size of the room, and on the number of persons to be accommodated. If a long table should be preferred, the smallest size should be 6 ft., and the largest 10 ft.; the additional size being gained by detached leaves. The centre of the table should be occupied with flowers, or some ornament not holding any thing required for the dinner; and by this means the dishes will be brought within the reach of the company.

The curtains we will have a geranium-coloured moreen, with gold fringe and binding, and a gilt cornice over, made to draw to and fro. In the bow of the window may be a flower-stand, or small oval table (l). The sideboard should be fitted up with every convenience possible (for, as we have before said, we cannot admit closets); and under it we will have a sarcophagus for wine, having means within it for cooling the wine with ice in

hot weather.

The room may be lighted at night by lamps suspended from the ceiling; but we prefer a chandelier with candles and metallic wicks, having ground glass shades, and similar candles and

shades for the instrument.

In such a room as this, so fitted up, and furnished with a few tried friends, may be realised all we conceive of social and domestic in-door happiness; and there, indeed, should we listen with delight to our favourite song or piece of music; or discuss without alloy the beauties and defects of our long-cherished authors, or of some more recent production of the day.

Manor Place, Paddington, March, 1835.

grand borizontal pieno, "awarvans one of Wornunk new horizontal semi-grands, watch, with a facetions perversity he with a facetions perversity, he

Aux. I. Remarks on the Architecture of the Middle Ages, especially of Italy. By R. Willis, M.A. F.R.S., &c. late Fellow of Caius College. 8vo, numerous Plates. Cambridge, 1835.

We shall examine this work in detail on a future occasion; in the meantime, to show the architect that it is one of very great interest, we make the following quotation from the preface:—"The original observations from which the following pages have been compiled, were made during a rapid tour through France, Italy, and part of Germany, in 1832-3. Two things particularly attracted my attention during the journey; the undeserved neglect with which the Italian Gothic had been treated; and the influence of locality upon each style of the middle age architecture. I was soon led to suspect that this architecture was susceptible of much more extended generalisations in its principles than had hitherto been attempted; and I have

ventured to point out the road to some of the most obvious.

"Amongst other objects, I was naturally led to search for evidence that would throw light upon the origin of the pointed arch. There is a fascinating simplicity about that theory, which would derive it from the acquirements of vaulting, that makes one wish to find it true; but I am sorry to say, that, notwithstanding the favourable prepossessions with which I set out, I have been compelled to dissent from this ingenious hypothesis. It appeared, from an examination of buildings belonging to the period of the introduction of this arch, that it was only one of a great number of new forms then introduced into architecture; such as trefoils and ogees. A theory, therefore, that only accounts for one of these, must be imperfect: but this is not the only weak point about the one in question; for, so far from the pointed arch being necessary to enable a parallelogram to be vaulted, it appears that architecture was already in possession of several methods of performing this, which were not even superseded by the introduction of that form, but continued in use to the latest period of the middle ages.

If this theory must be rejected, it may be asked, what other is to be substituted? I do not believe that we have sufficient data to determine the question; but, as so many observers in all countries are occupied in the collection and publication of examples, this deficiency is daily diminishing: in the mean time, I am inclined to think the balance of evidence in favour of

the Saracenic origin of these forms." (Preface, p. v.)

the sideboard should be fitted up with

ART. II. An Historical Essay on Architecture. By the late Thomas Hope. Illustrated from Drawings made by him in Italy and Germany. Royal 8vo, with a Volume of Plates. London, 1894.

or small oval table (

ONLY a limited number of this work having been printed, it no sooner appeared than the edition was exhausted; and, as we have reason to believe that the new edition will contain several improvements, we defer a farther notice of the work till it appears.

ART. III. A History and Description of the late Houses of Parliament, and ancient Palatial Edifices of Westminster, &c. By John Britton and Edward W. Brayley. No. III. and IV. for March and April, 1835. 8vo, London.

This accurate and most interesting work goes on well. The letter-press has already extended to 112 pages, and brings down the history of Westminster Palace to the time of Edward II. There is a plan, a section, and three views, in the number for March, and a plan and three views in the number for April, all most beautifully executed on steel.

ART. IV. Eight Views of Fountains Abbey, intended to illustrate the Architecture and picturesque Scenery of that celebrated Ruin; etched on Copperplate, from original Drawings by J. Metcalf and J. W. Carmichael: with a Historical and Architectural Description; by T. Sopwith. Imperial 4to. Newcastle, 1835.

THESE views are faithfully and characteristically drawn from nature, and etched on copper in an artist-like manner. The letter-press occupies four pages, and contains a few words on the history and present state of the ruin. "The ruins of Fountains Abbey occupy a sheltered and romantic portion of the valley of the Skell, distant about three miles from Ripon, and forming the western termination of the pleasure-grounds of Studley-Royal, the property of Mrs. Lawrence. Six hundred years have passed since this Abbey was first reared by monastic piety. For three centuries it was devoted to the services of the Roman Catholic Church, and for other three centuries it has been silently passing to decay: but time, with a lenient hand, has clad its walls in the venerable aspect of ruin, and the kindly influences of liberality and taste have preserved it from that devastation which has levelled many kindred fabrics with the earth. 'The mighty carcase of Fountains,' as Whitaker justly terms it, still remains in such preservation as not only to exhibit its architectural details, but also to afford the clearest idea of the relative situation and extent of the several buildings, and of the various uses to which they have been assigned. Founded at a period when the massive and gloomy character of Norman building was giving place to the more chaste and elegant style of early English architecture, Fountains Abbey presents a union of these styles throughout the whole fabric, excepting only the tower and portions of the east end, which are enriched by additions of later date. Whether, therefore, as regards architectural style, the arrangement of a vast monastic institution, or the picturesque beauty of its ruins, Fountains Abbey claims the attention of the architect, the antiquary, and the artist, while historical interest and romantic scenery add their powerful attractions, and furnish abundant sources of contemplation and enjoyment to every visiter." (p. 3.)

ART. V. A Treatise on Dialing; comprising the Delineation of Sun-Dials, in every Position to the Plane of the Horizon: in Two Parts, independent of each other; the one showing the Geometrical, and the other the Arithmetical, Construction, which are reduced to the greatest Degree of Simplicity by the Adoption of a new Plan, consisting of fewer and more uniform Precepts than have hitherto been accomplished; with a new Method of drawing a Meridian Line, and the Application of the Formula derived from the Trehedral, to the Angles of the Faces and Edges of Pyramids, the regular Solids, and Roofs. By Peter Nicholson, Architect. 8vo, 58 pages. Newcastle, 1833.

THE titlepage of this work sufficiently explains its object; and the name of Peter Nicholson will, to all who are acquainted with his architectural works, be a sufficient guarantee for its mathematical accuracy. The object of the *Treatise* is, to point out such a natural and easy theory for the construction of sun-dials as shall enable every mason or carpenter, who understands a little elementary geometry, to construct a dial for any given situation

ART. VI. A Lecture on the Preservation of Timber by Kyan's Patent for preventing Dry Rot: delivered by Doctor Birkbeck, at the Society of Arts, Adelphi; December 9. 1834. With an Appendix, &c. Pamphlet, 8vo, 3 engravings. London, 1835.

We have heard persons assert that it appears to them almost ridiculous to suppose that it ever can become necessary, on a large scale, to perform any operation with a view to render timber durable, beyond that of properly seasoning it by exposure to the atmosphere. But is not this mere prejudice? Why should not timber be prepared by a particular process, which conveys something additional into it, and thereby effects a chemical change in its nature, as well as leather is tanned? Our skin-wearing ancestors had no doubt the same prejudices against the innovation of tanning; but who can now deny its

utility?

"A very effectual procedure has taken place, in regard to one form of animal matter, by the preservation of the skin from natural decay in a process known by the name of 'Tanning.' This process will give a very good idea of Mr. Kyan's invention. Tanning consists in protecting the leather and skin by the introduction of tannin, which is generally derived from an infusion or decoction of the bark of the oak. If no change were produced in the gelatine, which makes the largest part of the skin to be immersed in the tannit, it would undergo certain chemical changes—it would putrefy, and lose its tenacity; but if a portion of animal jelly is dissolved in water, and a little of the substance added, similar to the tannin, a combination will take place between the tannin and the gelatine; a precipitate will follow of the animal matter, which is the tanno-gelatine, or a compound of tannin and gelatine, and is precisely that substance which is formed in the leather, and gives to it durability and power to resist the causes of decay. The same intention exists in the process of Mr. Kyan. It is true he does not act on the gelatine of animal matter, but he does on the albumen: one of the approximate principles of vegetable matter, which appears to have been slightly perceived by Fourcroy, but which was actually discovered by Berzelius, about the year 1813.

"In order to obtain this vegetable matter (albumen), there are various substances which may be employed. The Hibiscus esculentus yields it in considerable abundance: it is a West Indian plant, which Dr. Clarke mentions as adopted in Demerara, for the same purpose, as, in the other Islands, the white of eggs and blood are employed in the process of clarifying sugar. The Ficus indica, also, if divided at the stem, will exude a constraint of the sum of the bichloride of mercury (which is the agent adopted by Mr. Kyan) is added to the vegetable matter, albumen, it will be found, when they come in contact, that

decomposition occurs." (p. 8.)

"Mr. Kyan who had been for a series of years (since 1812) engaged in trying a variety of experiments on the preservation of timber, was led to the present experiment by having, as he conceived, at length ascertained that albumen was the primary cause of putrefactive fermentation, and subsequently of the decomposition of vegetable matter. Aware of the established affinity of corrosive sublimate for this material, he applied that substance to solutions of vegetable matter, both acetous and saccharine, on which he was then operating, and in which albumen was a constituent, with a view to preserve them in a quiescent and incorruptible state, and obtaining a confirmation of his opinions by the fact that, during a period of three years, the acctous solution openly exposed to atmospheric air had not become putrid, nor had the saccharine decoction yielded to the vinous or acetous stages of fermentation, but were in a high state of preservation; he concluded that corrosive sublimate, by combination with albumen, was a protection against the natural changes of vegetable matter." (p. 9.)

"The mode in which the application of the solution takes place, is in a task similar to the model on the table. They are constructed of different dimensions, from 20 to 80 feet in length, 6 to 10 in breadth, and 3 to 8 in depth. The timber to be prepared is placed in the tank, and secured by a cross-beam to prevent its rising to the surface. The wood being thus secured, the solution is then admitted from the cistern above, and for a time all remains perfectly still. In the course of 10 or 12 hours the water thrown into great agitation by the effervescence, occasioned by the expulsion of the air fixed in the wood, by the force with which the fluid is drawn in by chemical affinity, and by the escape of that portion of the chlorine or muriatic acid gas which is disengaged during the process. In the course of 12 hours this commotion ceases, and in the space of 7 to 14 days (varying according to the diameter of the wood) the change is complete, so that, as the corrosive sublimate is not an expensive article, the albumen may be converted into an indecomposable substance at a very moderate rate." (p. 25.)

After stating the result of various experiments, Dr. Birkbeck concludes by

After stating the result of various experiments, Dr. Birkbeck concludes by observing that this discovery is yet in embryo, but that the public benefit that will result from it is beyond calculation. In an Appendix the various purposes to which the process is applicable are detailed: such as preventing dry rot, seasoning timber, protecting from insects, applying the process to Canada and British timber, and preserving canvass, cordage, &c., from mildew.

"Canada timber is much more liable to decay than that grown in the northern parts of Europe, and for this reason is never used in buildings of a superior description. The principle of decay being destroyed as above shown, this objection is no longer in existence; and this kind of timber may now be employed with as great security as that of a superior quality and higher price.

"The same observation applies with great force to timber of British growth, particularly to that of Scotland, much of which is at present considered of very little, if any, value for durable purposes, on account of its extreme liability to decay, whether in exposed situations or otherwise. The present process will therefore render of considerable value plantations of larch, firs of all kinds, birch, elm, beech, ash, poplar, &c., which are the chief products of the great wooded estates, and which, when prepared, may be advantageously employed to most useful purposes." (p. 36.)

"Purposes for which the Prepared Timber, &c., would be highly useful.—

"Purposes for which the Prepared Timber, &c., would be highly useful.—Houses, farm-houses, out-houses. Large timbers, floors, roofs, gutters, &c., furniture, and all joiner's work, preserved from dry rot, and perfectly seasoned.—Posts, rails, gates, park paling, fences, hop-poles, felloes, spokes, shafts, &c. &c. For these purposes any kind of timber may now be used, instead of the more expensive kinds. It will also supersede, in many cases, the employment of iron, from its acquired durability and greater economy."

(p. 37.)
The additional expense of preparing timber for buildings, such as houses, farm-houses, out-houses, &c., in Mr. Kyan's manner is estimated at the very moderate sum of 20s. per load.

MISCELLANEOUS INTELLIGENCE.

ART. I. Retrospective Criticism.

THE Birmingham Town Hall. (p. 16.)—In this comparatively secluded spot we are late in obtaining news; and I did not see the January Number of your Magazine until within a week or two ago. The article which appears there relative to the Birmingham Town Hall is in many respects not one calculated to mislead your readers, but is grossly unjust as regards myself; and, what is worse, it is intentionally so, with the "knowledge and aforethought" of the writer. The points of which I have to complain are, in fact, all that

is important in the question of assigning the merit of the design of that building to any individual; and, as public approbation has been unequivocally bestowed upon it, my anxiety on this subject cannot be deemed misplaced, or my efforts to be rightly accredited, as making "much ado about nothing."

It happens fortunately for me, that, in the declaration I am about to make, there needs scarcely a single reservation; and when I state that the design

of the Town Hall is as much mine as St. Paul's Cathedral was that of Sir Christopher Wren, I state solemnly and sacredly the truth. It is quite true, that the site of the building, and the height, length, and breadth of the Hall, were prescribed; and, what I lament, the tasteless and absurd galleries which permanently disfigure it. It is also true, that, at the suggestion of a gentleman connected with the musical arrangements, an alteration was made in the interior decoration or finish of the walls, by substituting Corinthian pilasters and cornices, for an adaptation of the Ionic anta which I had designed; but, with these exceptions, I can take up the plans, elevations, sections, and working drawings, and declare that, line for line, there is not one that can be pointed out as the suggestion, or that was based upon the idea, or imagination, of any living being besides myself. Mr. Welch was my partner at the time of making these designs; but I never required from, or asked of, him any assistance; unless it were to copy a plan, or a portion of one, or to ink-line or tint some such, or to write upon the face of the drawings the description I wished to accompany them (as he writes a neater hand than I do): in fact, he did nothing but what a junior clerk would have done if beside me; and I am quite content to rest my case upon his own answers to questions embodying what I now allege. He cannot deny that which he has already on a hundred occasions admitted; namely, that the whole matter was left to me; and, if he is asked why it was so, he must, if he answers honestly, say that he felt himself less competent, and involuntarily submitted to my leading, as I should to his, had the case been directly the reverse. In advancing these things I have not the slightest wish to depreciate him, or magnify myself; the question is, not whether Mr. Welch were capable of the task, but whether he contributed to it at all; and if he did, what was his share of the contribution.

If the information contained in the article of which I complain proceeds from Mr. Welch, as I believe it does, why has he not had the honesty to state that he gave in his own designs for the Town Hall? He was, in fact, a competitor with me himself, as on two previous occasions for churches, and in all three cases without a chance of success; while in both the latter instances my designs were instantly adopted, and in that of the Town Hall, singled out of the sixty-nine that were sent in, along with those of Mr. Barry and of Mr. Rickman, for the premiums. I am not disposed to be severe, or to characterise his account in the terms it deserves; or I should at once make public his designs for the Town Hall, and leave those who look upon them to judge of the probability of his being author, or even in part author, of those inserted in your Magazine; but my object is simple justice for myself; and that part of the press to which is entrusted the guardianship and vindication of those who labour in the arts, will, I have no doubt, see that

justice is eventually done me.

Many of your readers will recollect the date of the competition for the Fishmongers' Hall; and will remember that it did not take place till nearly a twelvemonth after that for the Town Hall at Birmingham; they will be astonished, therefore, as I was, with the sentence in the article from which I quote, which states, that the design for the latter building "was one jointly produced by Messrs. Hansom and Welch two years before, and which was intended for the Fishmongers' Hall, London!" The designs that were made for the Fishmonger's Hall, purporting to be those of Messrs. Hansom and Welch, were made in the month of December, 1832, by my own hand from my own sketches, and were the result of my own studies, equally with those

for the Birmingham Town Hall.

I must apologise to your readers for the length to which I have gone in this apparently personal matter; and it has been no little violence to my own feelings to have thus to parade myself, as it were, before the public; but, as my reputation has been dealt unjustly by, I owe it to my children, whose bread it is, to speak out. More I could say, but it may not be necessary, although I have determined to lose no opportunity in future of asserting my right. I have also chalked out for myself the achievement of one other task in connave and chanked out for myser the acinevement of one other task in connection with the Town Hall, and that is the repayment of all who have lost thereby; and I wish not to be disturbed from the pursuit of this end. I feel that I have no right to call upon the public to make good my mishaps, and I know that public bounty is rarely exercised, except in the ligitimate channels of buying and paying for a man's usefulness; this article, therefore, I am anxious to contribute to the general stock as largely as I can, in the hope that it may procure me that which will enable me one day to have the pride of paying for that building, for which in labour and suffering I have expended my utmost, and incurred all that the slights of the gross and coarsely minded have ever heaped on my predecessors in the cause of devotedness to

the fine arts. — Joseph Hansom. Hinckley, March 5, 1835.

The New Bauschule at Berlin.—Admitting that the opinion passed upon this production of Schinkel's, at page 190. is tolerably correct, so far from taking any pains to confirm it by any plausible criticism, the writer has either most carefully or most carelessly suppressed an account of every thing that distinguishes it; so that it is impossible for any one to guess that it is as dissimilar as possible from what he is pleased to compare it to, namely "a super refinery." I will not call this uncandid, because it will be enough to I will not call this uncandid, because it will be enough to show that it is excessively indiscreet; presuming too much upon the utter ignorance of your readers respecting the building in question. I certainly have not seen the edifice itself, and therefore cannot speak with confidence as to the effect; yet, if any judgment is to be formed from the beautifully executed designs and details of it, which form No. 20. of Schinkel's Entwirfe, it is precisely the reverse of what might be inferred from the injurious comparison above stated. It is, in fact, particularly remarkable for the care bestowed on the minutize, for the variety, delicacy, and taste of its details, and for the careful finishing up of every part. That it is not calculated to produce "love at first sight," I am aware; it being one of those things which require to be fully examined before they can be satisfactorily appreciated. The style itself is certainly sui generis, and therefore not at all likely to answer the expectations of those who have made up their minds beforehand that an Academy for Architecture ought of course to exhibit what is significantly enough termed " regular architecture." Probably it is the absence of columns and other. features copied from Grecian example, and its being built of bricks instead of stone, that may have led J. H. somewhat too hastily to fancy it bears a resemblance to a "sugar refinery." For the like reason, no doubt, a correspondent of the Athenaum, the same who sneers at Munich as a "band-box capital," reprobates the Bauschule at Berlin, without deigning to criticise it, and, in not doing the latter, he most probably consulted his own particular convenience. As to his opinion on the subject of Munich and its buildings, I leave him to settle it with Mrs. Jameson; but, in regard to Schinkel's building, why did not so clever a critic hold up in terrorem to those here at home the shocking defects he detected in it? Most certainly it is not "classical" in the usual acceptation of that epithet, which is too frequently applied to the most arrant plagiarisms; yet it exhibits more study, more ideas, more of mind and invention, than a score of so-called classical designs.

To go no further than a single particular, there is more detail and design put into the doors alone, than some architects who might be named put into any two of their entire fronts; and, after what J. H. has said, this must appear all the more astonishing, because such is far from being the case in any "sugar refinery" ever yet erected. Built of brick, however, the Bauschule incontestably is; yet, with what kind of fairness it can be said to be built of "raw bricks," I leave others to judge, when informed that they are of very superior

quality; that the greatest attention has been paid to execution; and that all the ornamental parts, sculptures, and bas-reliefs are in terra-cotta. Provided it be at all suitable to the style adopted, brickwork of this description is so far from being necessarily mean, that it is susceptible of no little intrinsic beauty in itself alone. We have several old mansions in this country which aufficiently attest this, and prove what richness of form may be produced simply by means of moulded brick. In Norfolk alone, both East Basham Manor House, and the modern and yet unfinished structure of Cossey Hall, hanor House, and the modern and yet unmissed structure of Cossey Hai, are striking examples of the splendour that may be produced with what seems to be the very homeliest of materials. On this subject, however, I cannot do better than refer your readers to the 29th chapter of Hope's Historical Essay on Architecture, and the note attached to it. "The later pointed churches at Milan, at Pavia, at Monza, and elsewhere," he observes, "are entirely of brick, even to their most delicate tabernaclework and tracery." He also atates " that the Romans considered brickwork fit for all the elegancies of ornamental form."

So far, therefore, from agreeing with what is insinuated as to the peculiar unfitness of the Bauschule for its purposes, as far as taste is concerned, I unfitness of the Bauschule for its purposes, as far as taste is concerned, I rather consider it intended by its architect as an impressive lesson to the pupils; namely, that, instead of labouring how they may produce a more or less exact imitation of an ancient temple, they ought rather to strive to produce beauty of another kind, under other and widely different circumstances. Schinkel may consequently be considered as an exception to the concluding remark of Mr. Hope's book; for in many of his designs he may almost be said to have horrowed of "every former style of architecture whatever it might present of useful or ornamental, of scientific or tasteful; of having added thereto whatever other new dispositions or forms might afford conveniences or elegances not yet possessed." He has at least opened a new path, and pointed out how, if it may be accomplished at all, we may compose for ourrelief out now, it is may be accomplished at all, we may compose for our selves a new architecture, "at once elegant, appropriate, and original, and truly deserving the appellation of our own."—L. S. London, April 7. 1835.

Hukisson's Monument. (Vol. I. p. 381.)—The note on this monument is erroneous. My remarks did not apply to Huskisson's monument, but to its prototype, the Choragic monument of Lysicrates.—J. A. P. Liverpool,

Dec. 1834.

Errata.—In the Glossarial Index, Vol. I. p. 394., for "side pieces" read "head pieces." In Vol. I. p. 317., for "Kingston" read "Kingstown;" the place having been so named by George IV. when he embarked from it in September, 1821. It was formerly called Dunleary. By the railway the journey between Dublin and Kingstown, a distance of five miles, is performed in fourteen minutes .- John Tate. Queen Street, Dublin, March 17, 1835.

ART. II. Queries and Answers.

GERMAN Fire-places.—In answer to the query of our correspondent, M. de Ridder, p. 144., a copy of M. Bernhardt's Prospectus has been sent us enclosed in a letter signed Alexander Black., 27. Tavistock Street, Covent Garden. The prospectus promises a great deal, but developes nothing farther than that it is intended, in the first place, to get up a company to carry the improvements into execution. We shall watch the progress of this business, and make the result known to our readers, as soon as it can be of any use to them .- Cond.

Warning Churches .- Within this last month a method of warming churches and chapels with gas, instead of steam or hot water, has been established with very good effect. Can any of your readers give me an idea as to how it is accomplished?— Tyro. Wilmington Square, March 2. 1835.